DECEMBER 1954

Journal

VOL. 46 • NO. 12

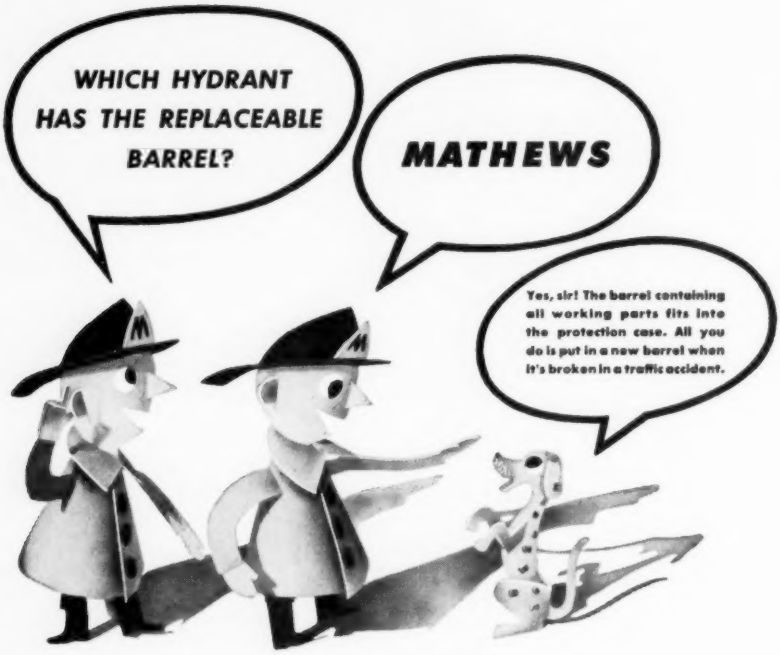
AMERICAN WATER WORKS ASSOCIATION

In this issue

Fostering Water Works Careers	**Murdoch**
New Materials	**Henke**
Conference and Section Programs	**1954 Meetings**
Journal AWWA Subjects and Authors	**1954 Indexes**

Silent Service Is Not Enough!

Approaching the Public Relations Job
Effective Talks—Best Avenue for Direct Contact
Building Employee Interest, Understanding, and Enthusiasm
Strengthening Ties With Public Officials and Key Citizens
Telling the Water Works Story in the Schools
Publicity—Powerful Amplifier of Words and Deeds
Employing Advertising's Versatile Devices
Making the Water Works Interesting and Attractive


WHICH HYDRANT HAS THE REPLACEABLE BARREL?
MATHEWS
Yes, sir! The barrel containing all working parts fits into the protection case. All you do is put in a new barrel when it's broken in a traffic accident.

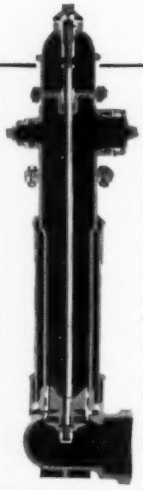
MATHEWS MEANS FIRE PROTECTION

LONG LIFE. Mathews Hydrants are protected at wear points by bronze bushings — corrosion and rust are licked.

TROUBLE-FREE. The stuffing box plate, cast integral with the nozzle section, provides a positively leakproof construction — water, sediment and ice cannot interfere with operating thread.

LOW-COST MAINTENANCE. Only one point requires lubrication — and that only during routine inspections.

REPLACEABILITY. A Mathews leveled in an accident can be replaced without excavating and in a jiffy. Community protection is interrupted only for minutes.



The Mathews includes every quality feature...

Compression type valve to prevent flooding • Head turns 360° simply by loosening bolts • Replaceable head • Nozzle sections easily changed • Protection case of "Sand-Spun" cast iron for strength, toughness, elasticity • A modern barrel makes an old Mathews good as new • Mechanical-joint pipe connections as needed

MATHEWS HYDRANTS

Made by R. D. Wood Company

Public Ledger Building, Independence Square, Philadelphia 5, Pa.

Manufacturers of "Sand-Spun" Pipe (centrifugally cast in sand molds) and R. D. Wood Gate Valves

Journal

AMERICAN WATER WORKS ASSOCIATION

521 FIFTH AVE., NEW YORK 17, N.Y. • Phone: MUrray Hill 2-4515

December 1954

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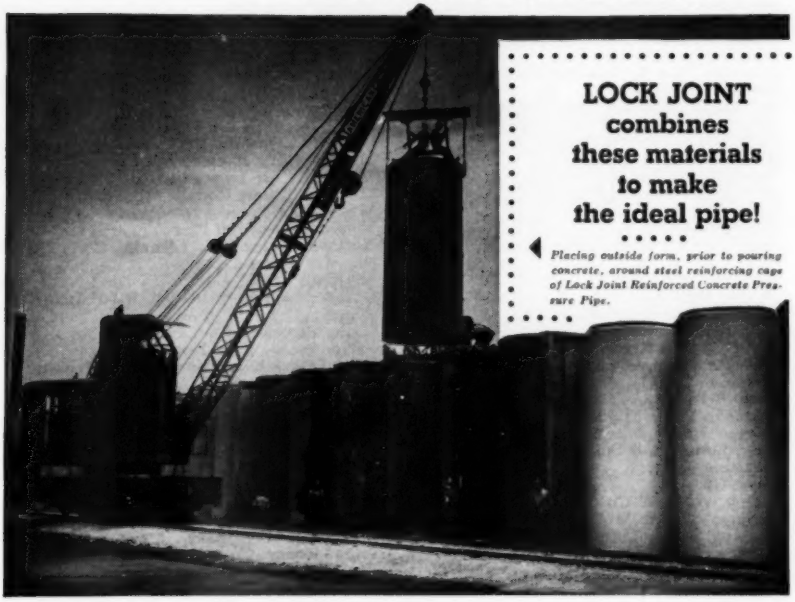

LOCK JOINT combines these materials to make the ideal pipe!

Placing outside form, prior to pouring concrete, around steel reinforcing cage of Lock Joint Reinforced Concrete Pressure Pipe.

CONCRETE, with its proven qualities of durability, non-corrosion, resistance to electrolytic action, and high compression strength is combined, by Lock Joint, with steel's toughness, resilience and high tensile strength to make a pipe that retains the best qualities of both—non tuberculance, high structural strength and long life with little or no maintenance. Dense concrete affords complete protection for the quality reinforcing steel. Both materials are carefully calculated to meet your pressure needs with a wide factor of safety. The Lock Joint Pipe Company's Rubber and Steel Joint is extremely watertight and, at the same time, flexible.

For superior strength, carrying characteristics and trouble-free operation, let Lock Joint supply your pipe needs in sizes 16" and larger.

LOCK JOINT PIPE COMPANY

Established 1905

P. O. Box 269, East Orange, N. J.

PRESSURE PIPE PLANTS: Wharton, N. J., Turner, Kan., Detroit, Mich., Columbia, S. C.

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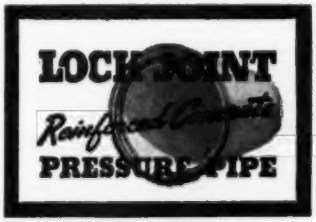

SCOPE OF SERVICES—*Lock Joint Pipe Company specializes in the manufacture and installation of Reinforced Concrete Pressure Pipe for Water Supply and Distribution Mains 16" in diameter or larger, as well as Concrete Pipes of all types for Sanitary Sewers, Storm Drains, Culverts and Subaqueous Lines.*

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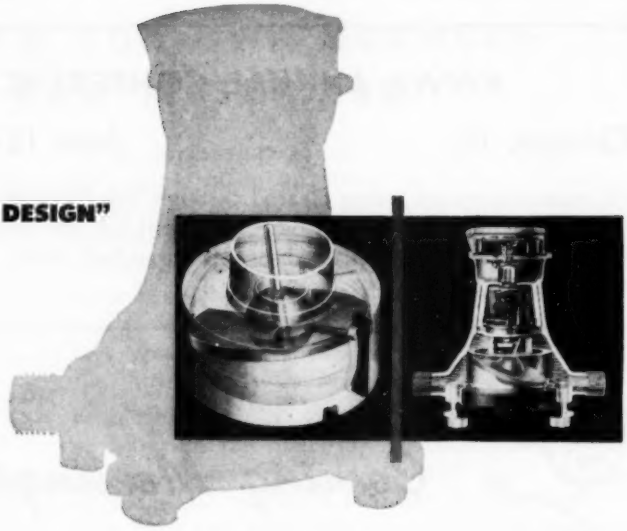
"BALANCED DESIGN"

MEANS



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Three problems that give meter superintendents gray hairs . . . noisy meters, broken discs and premature failures . . . have as their primary causes turbulence, interference, and improper motion of the disc piston. Here's how Trident meter's "balanced design" eliminates these faults:

The Trident disc is axially controlled. The thrust roller . . . a Neptune "first" . . . guides the disc in the exact path necessary for smooth, balanced flow of the water. No sloppy or eccentric motion to cause noise, disc breakage or excessive wear. Inlet and outlet ports, and the casing itself are carefully designed for smooth, uninterrupted flow of water. There is no turbulence caused by water circulation up through the gear train and stuffing box . . . these are permanently lubricated and sealed from the path of the water.

We believe the Trident meter, if properly installed, is the quietest, most dependable meter you can buy. It's one of the many reasons why more Trident meters have been bought in the past 50 years than any other meter.

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Branch Offices in Principal American and Canadian Cities

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AWWA ANNUAL CONFERENCE

Chicago, Ill. **June 12-17, 1955**

All reservations are being cleared through the AWWA office. The hotels have agreed to accept no reservations for the 1955 Conference except as they are requested on the standard form, through the AWWA.

Coming Meetings

AWWA SECTIONS

1955

Jan. 18—New York Section Annual Winter Luncheon Meeting, Hotel Park Sheraton, New York. Secretary, Kimball Blanchard, Rensselaer Valve Co., 56 Grand St., White Plains.

Feb. 9—New Jersey Section Winter Luncheon Meeting, Hotel Essex House, Newark. Secretary, C. B. Tygert, Box 178, Newark 1.

Feb. 9–11—Indiana Section at Lincoln Hotel, Indianapolis. Secretary, Robert J. Becker, Asst. Supt. of Purif., Indianapolis Water Co., 113 Monument Circle, Indianapolis 6.

Mar. 21–23—Southeastern Section at DeSoto Hotel, Savannah, Ga. Secretary, N. M. deJarnette, Engr., Div. of Water Pollution Control, State Dept. of Public Health, 245 State Office Bldg., Atlanta 3, Ga.

Apr. 13–15—Nebraska Section at Cornhusker Hotel, Lincoln. Secretary, E. Bruce Meier, Asst. Prof. of Civ. Eng., Univ. of Nebraska, Lincoln.

Apr. 13–15—Kansas Section at Baker Hotel, Hutchison. Secretary, Harry W. Badley, Repr., Neptune Meter Co., 119 W. Cloud St., Salina.

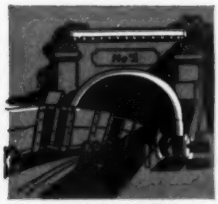
(Continued on page 8)

QUALITY CONTROL BEGINS WITH OUR OWN SOURCES OF RAW MATERIALS

In the production of cast iron pressure pipe, the advantages of an integrated operation, including direct control and ownership of raw materials sources, are important. They mean complete independence of action in product research and development throughout every step in the production of raw materials—*mining* operations (coal and iron ore)—*quarrying* operations (limestone)—*coking* and *blast furnace* operations—for producing pig iron.

In addition to being able to control the quality of pipe-making raw materials at their sources, our Quality Control of pipe production gives further assurance to customers that the quality level of U. S. Cast Iron Pipe is in excess of standard specifications. Our pipe is produced to our own quality control specifications, more exacting than the established specifications under which cast iron pipe is normally purchased.

U.S. cast iron PIPE



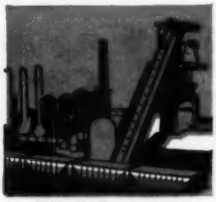
Ore and Coal Mines

U. S. PIPE & FOUNDRY COMPANY

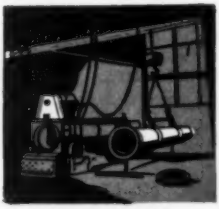
GENERAL OFFICES: BIRMINGHAM 2, ALABAMA

A wholly integrated producer . . . from mines and blast furnaces to finished pipe.

Coke Ovens



Blast Furnaces



Pipe Plants

Coming Meetings

(Continued from page 6)

Apr. 14–16—Arizona Section at San Marcos Hotel, Chandler. Secretary, Quentin M. Mees, Arizona Sewage & Water Works Assn., 721 N. Olsen Ave., Tucson.

Apr. 18–20—Canadian Section at Chateau Frontenac, Quebec. Secretary, A. E. Berry, Director, Ontario Dept. of Health, Parliament Bldgs., Toronto 8, Ont.

Apr. 20–22—New York Section at Hotel Statler, Buffalo. Secretary, Kimball Blanchard, Rensselaer Valve Co., 56 Grand St., White Plains.

Apr. 29–30—Montana Section at Finlen Hotel, Butte. Secretary, A. W. Clarkson, Acting Chief, Water Section, Div. of Environmental Sanitation, State Board of Health, Helena.

May 4–6—Pennsylvania Section at Webster Hall, Pittsburgh. Secretary, L. S. Morgan, Div. Engr., State Dept. of Health, Greensburg.

May 19–21—Pacific Northwest Section at Hotel Chinook, Yakima, Wash. Secretary, Fred D. Jones, Dist. Supervisor, Rm. 305 City Hall, Spokane, Washington.

Sep. 7–9—New York Section at Saranac Inn, Saranac. Secretary, Kimball Blanchard, Rensselaer Valve Co., 56 Grand Street, White Plains.

Sep. 12–14—Kentucky-Tennessee Section at Phoenix Hotel, Lexington, Ky. Secretary, J. Wiley Finney Jr., Howard K. Bell, 553 S. Limestone St., Lexington.

Sep. 14–16—Michigan Section at Durant Hotel, Flint. Secretary, T. L. Vander Velde, Chief, Section of Water Supply, State Dept. of Health, Lansing 4.

Sep. 21–23—Ohio Section at Neil House, Columbus. Secretary, M. E. Druley, Dist. Mgr., Dayton Power & Light Co., Wilmington.

Sep. 21–23—Wisconsin Section at Hotel Schroeder, Milwaukee. Secretary, Leon A. Smith, Supt., Water & Sewerage, City Hall, Madison 3.

OTHER ORGANIZATIONS

1955

Mar. 7–11—National Assn. of Corrosion Engrs., at Palmer House, Chicago.

Mar. 28–Apr. 1—Western Metals Exposition, Pan-Pacific Auditorium, Los Angeles, Calif.

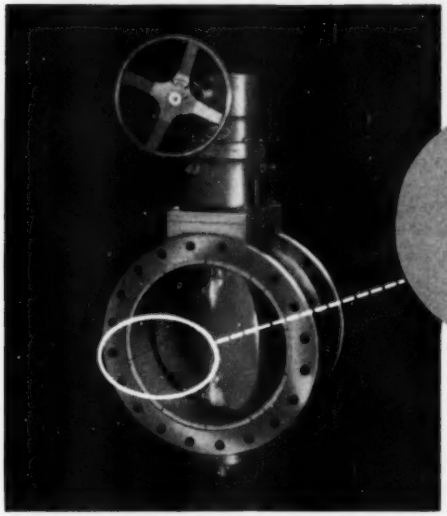
Jul. 11–16—Nuclear Engineering Congress, Engineers Joint Council, New York.

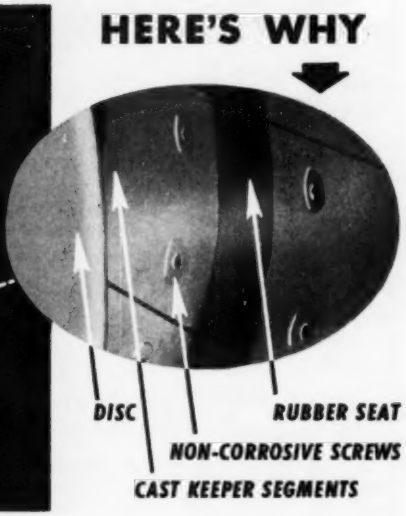
Jul. 18–23—International Water Supply Assn. Congress, London.

Sep. 18–22—New England Water Works Assn., Lake Placid Club, Lake Placid, N.Y.

Oct. 10–13—Federation of Sewage & Industrial Wastes Assns., Ambassador Hotel, Atlantic City, N.J.

125# Valves...drop tight!





Will not "freeze" from corrosion— *Corrosion can't hinder operation.* Disc edges are chrome plated or stainless steel and close into a thick rubber seat. These features plus self lubricated bearings and stainless steel shafting make it impossible for valves to "corrode tight" either open or shut.

Full 90° closure into Rubber Seat— The disc is slightly larger than the inside of the rubber seat and thus actually displaces the rubber when closed. The ratio of seat thickness to disc indentation insures drop-tight shut off and avoids permanent set. The seats are secured in the valve body by removable keeper segments.

Saves space. Even these high pressure valves are compact, easy to install, and require little head room. Available from 10" to 72" diameter in either cast iron or fabricated steel. A variety of operator types can be supplied.

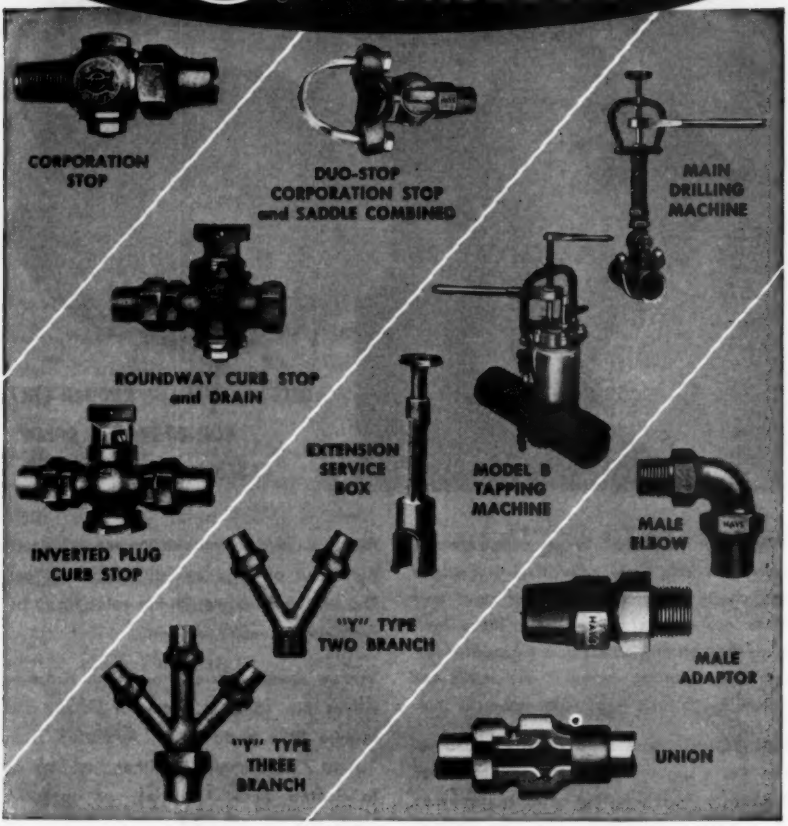
Write for literature ➧ **High pressure Butterfly Valves . . . Bulletin 4B**
Low pressure Butterfly Valves . . . Bulletin 1B

HENRY PRATT

RUBBER SEAT Butterfly Valves

Henry Pratt Company, 2222 S. Halsted St., Chicago 8, Ill. Representatives in principal cities

HAYS WATER SERVICE PRODUCTS



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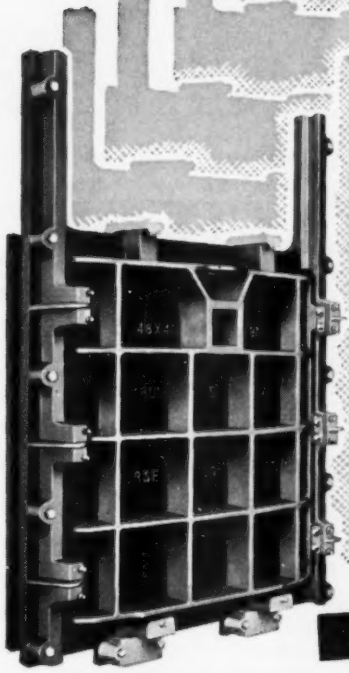

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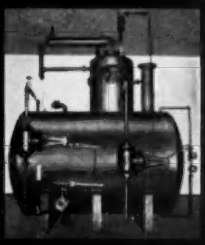

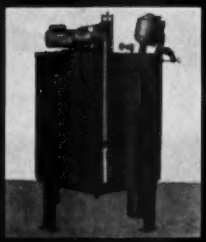

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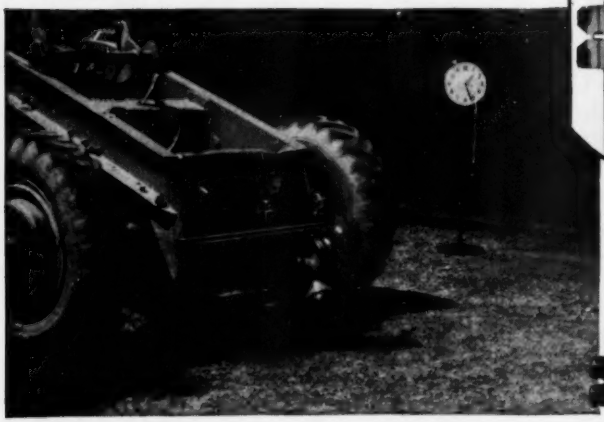

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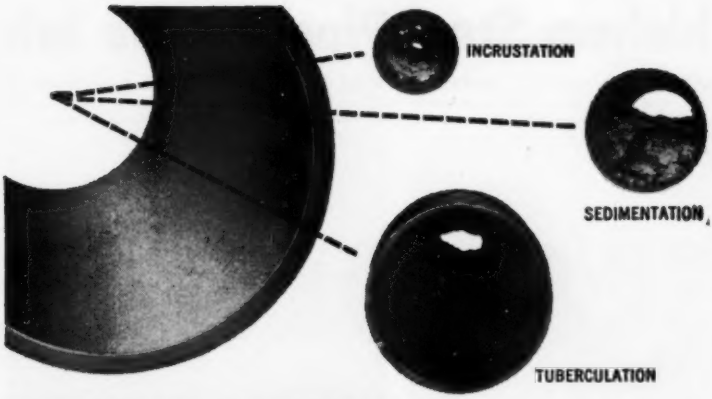

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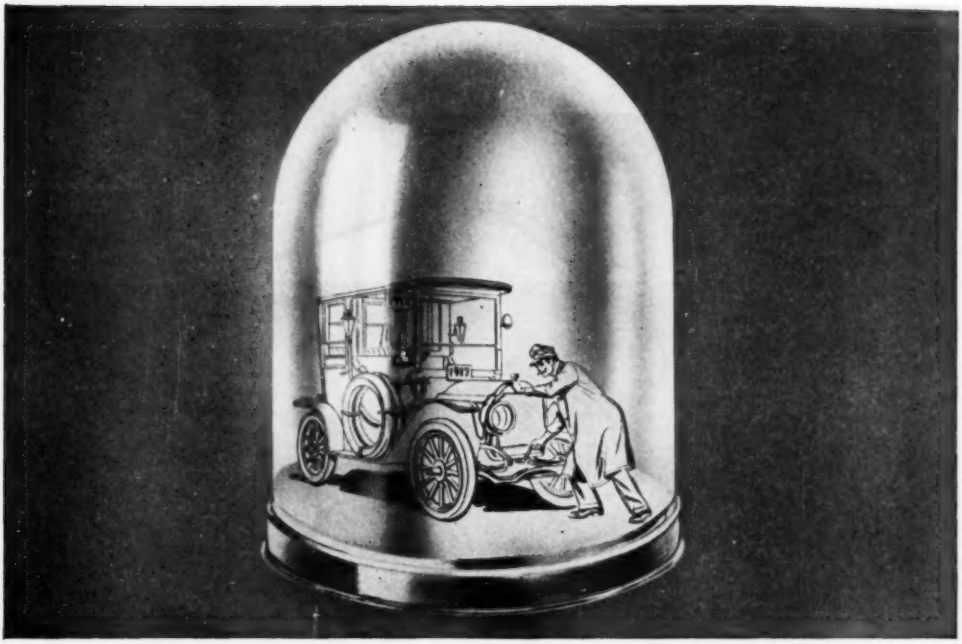

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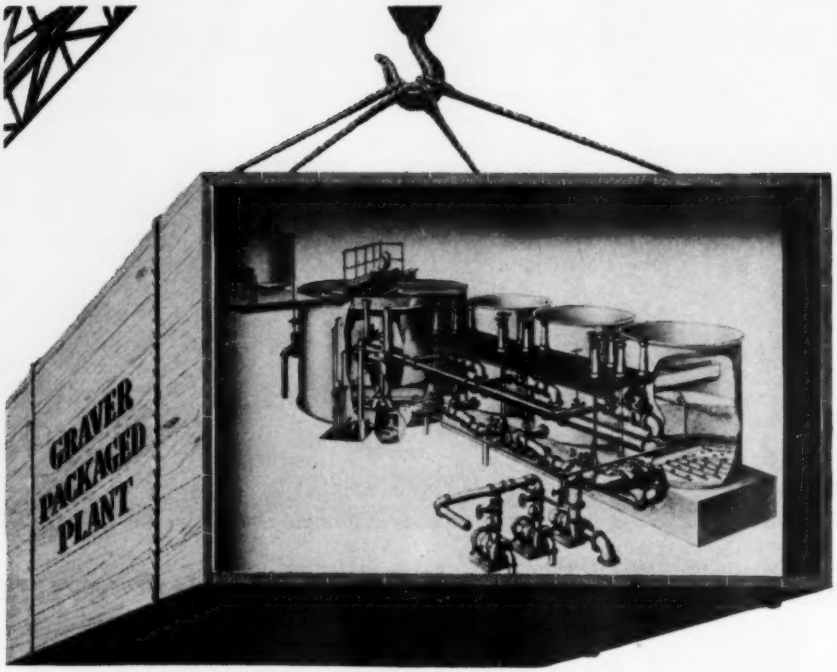

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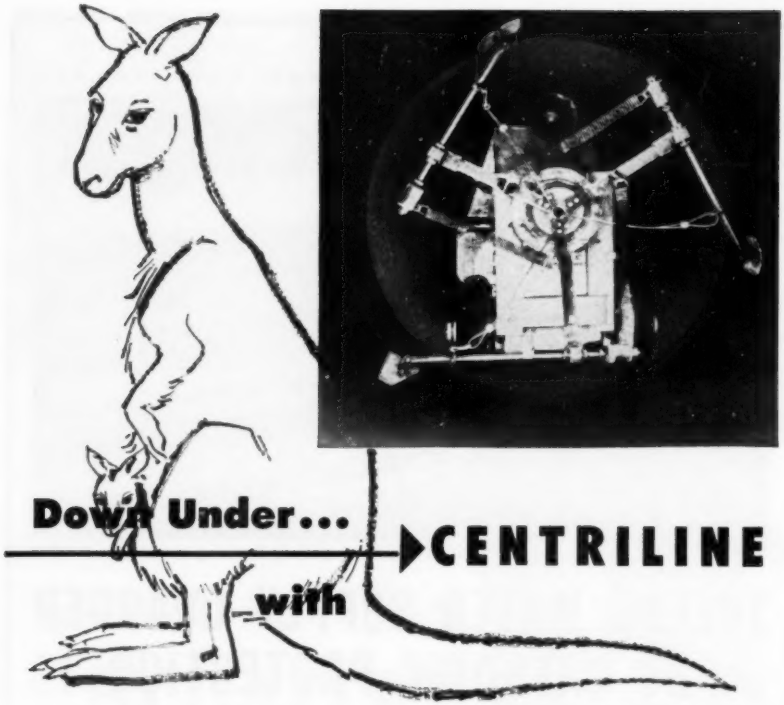

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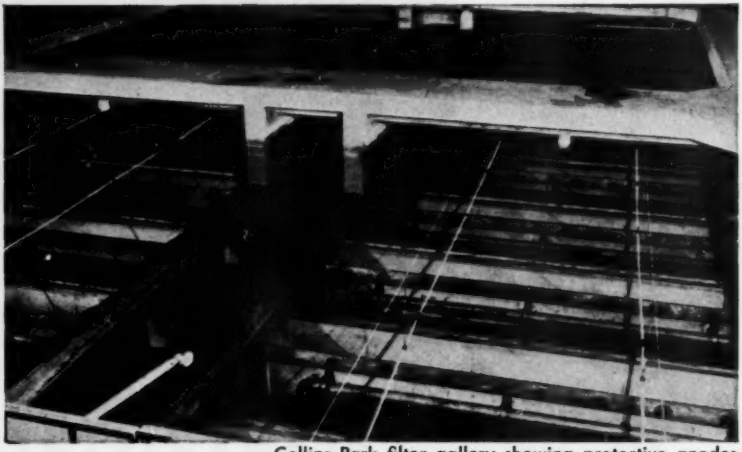

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AMERICAN WATER WORKS ASSOCIATION

VOL. 46 • DECEMBER 1954 • NO. 12

Fostering Water Works Careers

By John H. Murdoch Jr.

A paper presented on Sep. 27, 1954, at the Missouri Section Meeting, Jefferson City, Mo., by John H. Murdoch Jr., Vice-Pres. & Counsel, American Water Works Service Co., Philadelphia.

WATER works executives should ask themselves whether they are fostering the careers of their associates or are failing to recognize and encourage energy, imagination, readiness to try new approaches to old and baffling problems, and willingness and desire to learn and to grow. Are those in authority attempting to obtain subordinates with a high level of inherent ability or are the well trained and eager newcomers being kept out? These are questions which every executive must answer for himself.

Fostering a career, whether in public, professional, or business life, means promoting, encouraging, and sustaining devotion to progressive achievement. It is up to the older members of the water works industry, who have the authority, to create an atmosphere that will attract young men with energy and ability to public service. If the field does not provide opportunities for constructive, imaginative work, it will not offer career possibilities.

Fully recognizing the danger of the negative approach in the opening phase of a discussion, the author nevertheless proposes to adopt it by pointing out several ways to kill water works careers. If work in an organization is carried on with a sense of frustration, careers will not survive. Suppose those in a position to set the tone have come to believe that they know all the answers and never ask for suggestions, never pose problems, never request or willingly receive criticism, never sit down with associates for frank discussion of mutual difficulties. Such a climate stifles every young man of ability, so that he either quits or becomes a mere time-serving drone. Or suppose that the superior officers always meet suggestions for improved service with excuses about lack of money or remarks about what their fathers got along with or about socialistic trends in the minds of the young. Young men of the type the industry needs soon realize the utter futility of trying

to make bright dreams come true in such an organization. Finally, assume that the organization is financially poor and has no hope of reaching a point where adequate service can be offered or competitive salaries paid. No young man worth having would consider pursuing a career there, knowing, as he must, that adequate financial strength can be developed if sound management, salesmanship, and service are properly combined.

On the other hand, water works careers will be fostered if the industry sets high goals of public service; if it emphasizes the difficulties to be overcome but suggests that they are not insurmountable; if it shows that the leaders, the men who bring about efficient service, are meeting a great and growing public need; if it raises the standards for water works personnel, so that they can have the social recognition they deserve on account of their personality and the importance of their work; and if the material rewards it offers are high enough so that it can compete, in enlistment programs, with other businesses and professions. If the industry will do all of these things, it can get career men, and if, having secured them, it gives them encouragement and opportunity for growth in ability and in public service, it can truly say that it is fostering water works careers.

The leaders of the industry must realize that the public wants better water service and that such service cannot be provided at present rates. The leaders must then devote themselves to selling the public the idea of better service at rates that will make it possible. For generations, most of the industry has been taking the opposite approach: it has been justifying—selling—unsatisfactory service at low rates. Until this tack is reversed, inadequate service will be the rule and water works careers will not be fostered.

The public wants adequate supplies. Too many communities have experienced frequently recurring deficiencies. There is enough water for everyone in years of so-called normal rainfall, but successive years of very light rainfall and low-rainfall cycles come too often. Both the population and the per capita use of water are growing. Industry uses more than ever before. It is the water works' responsibility to see that the supply systems are adequate and remain so. The water works can be relieved of that responsibility only if communities, knowing the facts, deliberately choose to put up with periodic shortages rather than pay the price of fully adequate supplies.

Better distribution is also a public desire and one that involves conflicts of interests. New territories want service while the established communities object to paying the increased costs required to satisfy the demands of the new competitive sections. Yet it seems to be the established policy to encourage the exodus of city residents to the thinly settled suburbs. Cities and states strain their resources to provide urban conveniences for suburban areas and to provide transportation facilities for commuters. Most water plants have failed to keep up with this spreading of the population. Distribution mains that were formerly adequate are now required to serve essentially as transmission lines and cannot do the job. Few managers have taken the trouble to make thorough studies of the probable future growth of population and water demand, and of changes in demand patterns from section to section. Too often desperate efforts

are made in the current year to correct conditions that arose the year before instead of making provision for the demands of the year after. Practically no water supply agency has been able to give 24-hr service to all of its customers in the amounts they wish. In many places, during the past few years, some customers have been entirely deprived of service for varying periods. Lawn sprinkling has become a luxury that has to be curtailed. Without a disproportionately large capital investment, the difficulties cannot be overcome. Career opportunities are presented by the engineering, financing, and public salesmanship efforts needed to solve this dilemma.

Efficiency Yardsticks

Standards by which the efficiency of various water works can be compared are a necessity. The automatic evaluation of efficiency provided by competition is absent in the water works industry. Customers must deal with a particular water works as long as they stay in its district, no matter how unsatisfactory the service may be or how much revenue is wasted by laxity in operation or by the use of outmoded equipment. Water works may claim to be efficient but they cannot prove it. It has not even been possible to obtain agreement on a standard for unaccounted-for water that will give weight to differences in main mileage and variations in pressure. Too much of the industry's statistical data is expressed in dollars, the value of which varies from year to year and from district to district with changes in labor rates and material costs. The author has been told that conditions differ so greatly from plant to plant that no measure of efficiency can be worked out by which comparisons can be made. Surely in the years to come some man or men with the ability to surmount the admitted difficulties will devise methods of gaging relative efficiency.

For this purpose, the author would like to suggest, as a basis for discussion, the use of a series of parameters that can be established from readily available data. A combination of these might be employed to indicate the state of health of a given utility. To avoid the difficulties inherent in the use of dollars as measures of cost, it is believed that costs should be expressed in man-hours, kilowatt-hours, pounds of fuel, and so forth, as appropriate.

At the pumping station, the power consumed can be determined either in kilowatt-hours or in pounds of coal per million gallons pumped per foot of static head. For plants using electricity, there must, of course, be an adjustment to give credit for a high load factor. Some career man can very likely suggest the proper basis for any such adjustments. The man-hours required per million gallons pumped per foot of static head is another parameter of pumping station efficiency. Such yardsticks will not be universally applicable, however, until some way can be found to give weight to the cost of facilities without getting into dollar value difficulties. For example, man-hours and power might be reduced by installing new equipment or by utilizing large lines to cut friction losses, but the overall costs might thus be increased. This is another subject for study by the career man. Even admittedly partial yardsticks, however, if widely developed, tabulated year by year, and evaluated carefully, would prove helpful as checks.

The comparative efficiency of distribution systems might be indicated by

a calculation of distribution department man-hours per customer and per mile of main. The number of distribution maintenance man-hours per mile of main is likewise significant. Also, the difference between the amount of water delivered by the main service pumps and the total amount registered on customers' meters should be divided by the miles of main and by the average system pressure registered at a central system gage. If the number of man-hours of distribution maintenance is low and the system loss per mile per pound of pressure is high, there may be inadequate maintenance. Career men will think of other cross checks and implications.

In the accounting and billing departments, the man-hours involved per meter could be calculated. To determine adequacy of service, perhaps the average number of customers for the year could be multiplied by the total number of hours in the year, giving a result in "customer-hours of service." Then records could be examined to find the number of customer-hours of curtailed or interrupted service. An "interrupted-service" percentage could then be calculated.

These suggestions, or others more sound, may be developed by the men whose careers it is hoped the industry will foster. Some way might be found to convert such data into a system of index figures that would make comparisons easy.

The water works industry owes it to itself, and to the public it serves, to be alert to discover new men of high character who can improve on what has been done. Having found such men, the industry must hold before them high ideals and the promise of rewarding careers.

Correction

The 1953 census of fluoridation (published in the September 1954 JOURNAL) failed to indicate (page 930) that the Corpus Christi, Tex., installation serves eight additional communities. Also, Gonzales, Tex., was listed (page 931) as using a dry feeder to apply sodium fluoride; the town actually uses a saturator type feeder for this purpose.

Determining Applicability of New Materials to Water Works

By Russell W. Henke

A contribution to the Journal by Russell W. Henke, Chief Mech. Engr., Research & Development Div., Badger Meter Mfg. Co., Milwaukee, Wis.

MEN in the water works field have a reputation for clear-headed, stable performance in their endeavors. They are conservative because they must be. They just cannot afford to take unnecessary chances with the health and well-being of the people to whom they are responsible. This attitude of conservatism is reflected in many facets of water works operations, including the specification of materials of construction.

In former years the choice of materials available for the construction of water works equipment was limited largely to cast iron, cast steel, and copper-base alloys—brasses and bronzes. Many items of water works equipment were developed during these times, and the materials at hand were specified and made to work. It is indeed a tribute to the pioneers in the field that their efforts were as successful as they have proved to be.

As technical advancements were made, the design of equipment was improved from a functional standpoint, but there was a strong conservative tendency to specify familiar materials, often for no better reason than prior usage. In some applications, the old material actually turned out to be the best available for the purpose. Utilization of new materials was frequently ruled out by municipal specifications based on the use of older ones. Thus, not only was a more applicable material rejected, but the additional economies that could have accrued were lost.

World War II, with its insatiable appetite for strategic materials, such as copper, nickel, and chromium, presented a problem and a challenge to manufacturers of municipal water works equipment. Many succeeded in finding suitable substitute materials from which to make their goods, but few obtained outstanding results.

The war-engendered shortages, however, were responsible for the development of materials that are now proving to be almost spectacular in some of their properties and applications. The metals industry has provided alloys capable of handling tasks considered virtually impossible before that time. The development of corrosion-resistant metals has expanded, as evidenced by the large number of stainless-steel grades, high-nickel alloys, and copper-base materials available. Perhaps even more noteworthy has been the expansion of the plastics industry.

It is true that immediately after the war some misapplication of plastics led to adverse comment on this class of materials. This unsatisfactory experience was the result of the greatly accelerated rate of expansion of the new industry rather than of inherent defects in plastic materials as a group. Today a plastics technology has been

developed that gives this material full ranking with other established types. Plastic materials are now replacing and will continue to replace other kinds in certain applications at a lower cost and with greatly improved performance.

Ceramic materials also have enjoyed widely diversified application in this new era of materials utilization.

This tremendous growth of the materials field has necessitated a new outlook on the part of engineers and others responsible for materials specification. It is no longer satisfactory to specify particular materials merely because they worked in the past or were used on similar types of equipment. Specifications must be based on an analysis of the basic requirements of the application: strength, wearing qualities, corrosion conditions, cost, and the like. All available materials should be compared in terms of their ability to meet these requirements. Such an analysis might disclose that some parts now in use are overdesigned; that is, the material from which they are made is better than what is actually needed. This is uneconomical material utilization. It might also be found that the substitution of an entirely different class of material—plastic for metal, for example—would result in equal or better performance at less cost.

The possibility of another great emergency, with accompanying materials shortages, must always be kept in mind. The fact that material resources are diminishing should also enter into the thinking of any person charged with specifying materials. It is the responsibility of everyone to insure that the nation's natural resources are not needlessly depleted. This means that the scarcer materials should be specified only when absolutely required. For example, if a plastic part can be used satisfactorily in place of a bronze part, it would be only good sense to employ the former, thus reserving copper for an application where nothing else would work properly.

In the water works field, those concerned with the materials problem can be grouped in four classes:

1. Individuals charged with specifying materials of construction
2. Municipal agencies, whose collective opinion is usually embodied in municipal specifications, of which materials specifications are a part
3. Equipment manufacturers
4. Technical organizations, such as the AWWA, which cut across the whole water works field and include members from each of the three preceding groups.

In applying a "new-materials philosophy," all of these groups should:

1. Cease to regard past practice as a mandate for future action but consider it rather as experience upon which to draw in forming judgments for future undertakings
2. Become acquainted with all applicable materials classes
3. Revise specifications so that they are not based on particular materials but rather on the conditions which the materials must satisfy. Thus, selection can be made in accordance not only with performance but with economy, conservation, and availability as well
4. Keep an open mind concerning new developments, while at the same time requiring adequate proof that new materials will perform satisfactorily in the application under consideration
5. Avoid specifying materials that are better than need be for a given application. Sound engineering practice dictates that materials which just satisfy the requirements of an application are the ones that should be used.

Silent Service Is Not Enough!

AWWA PUBLIC RELATIONS STUDY

The eight articles published under the title "Silent Service Is Not Enough" *between November 1946 and August 1948 were designed to serve as a textbook of public relations for water utilities. The series has long been out of print, and many of those who received the original bulletins have misplaced them. Meanwhile, AWWA has enrolled many hundreds of new members who joined too late to obtain copies, and a considerable nonmember demand has made itself felt. It is to make the basic public relations story known to this new audience, as well as to make it available to all, that the full text, somewhat revised, is reproduced here and will be made available later as a separate manual.*

1. Approaching the Public Relations Job

Water is essential to life, and an adequate supply of safe and satisfactory water is essential to community existence. You who control the procurement, treatment, and distribution of water hold a precious key to the well-being of the town or city which you serve. Despite this fact, you have learned that water works executives are not conspicuously honored among men. The reasons are not hard to find. First, life without water is so completely unthinkable that the average citizen expects any organized community to provide him with water as a matter of course. He accepts water as he accepts the air he breathes. Second, most water works executives have been content to let their work speak for itself—feeling, perhaps, that the essential nature of their job was so self-evident that little need be said about it.

You know, of course, that the flow of water, so casually accepted by your fellow citizens, is no happy accident. It is the result of farsighted planning, sound engineering, and constant vigilance. It is the result of efforts which should be a source of interest and concern to every man, woman, and child. They will be interested if you give them a chance.

But ours is a complicated society. The individual has many things on his mind. Of his own accord, he gives thought to his water supply only when something goes wrong or when his pocketbook is affected or some outside pressure forces his attention to a water works matter. All too

often, his thinking on such occasions is beclouded by emotion and his point of view is prejudiced. The only way to secure thoughtful public understanding of the water works as a community cornerstone is through a planned and consistent information program directed at the people with whom the water department or company deals.

A water works system exists for just one reason—to bring water to people. People, therefore, are as much your concern as are the plant and equipment you supervise.

A Three-Channel Relationship

As a water works executive, your relations with people fall into three channels:

1. Relations with your own employees
2. Relations with public officials of the community
3. Relations with the public at large.

Each of these groups exercises a specialized influence. The employee is a most important factor. He is the center of a sphere of immediate influence—his friends, neighbors, and relatives, as well as all members of the general public with whom he comes in contact in the course of his work. If he takes satisfaction in his job and pride in the utility, his attitude can become a force that is constantly building good repute for the organization of which he is a part. If, on the other hand, he is indifferent or disgruntled, an unfavorable impression even more powerful in its effects will be created.

The public officials of the community are the spokesmen for the community as a whole—they represent the public in most executive-level relationships. Whether yours is a private company or a division of government, an important part of your day-to-day dealings will be with elected or appointed representatives of the people. It is, therefore, most important that these individuals understand how the water works functions, what its needs and problems are, and how it is planning for the future.

But this is not enough. Although the people leave many matters in the hands of their representatives, they, in turn, are influenced constantly by the force of public opinion. Their goal is to remain just far enough in advance of the public's thinking to march at the head of the parade. They will not, voluntarily, move very far beyond what they believe the public is ready for.

In your public relations planning, you cannot afford to overlook either your employees or the city officials, but you and they must have the confidence of the people you serve before the public relations program can be called a success. Every community has its confirmed grouches, and one or two will keep you on your toes. The objective of your program, how-

ever, must be to build confidence and support of your enterprise in the public at large.

Value of Program

An information program directed at employees, public officials, and people generally will result in five practical gains—all valuable to the water works as an organization and to you as its executive head:

1. Improvement in daily working relationships among employees, between employees and individual customers, between you or your divisional executives and the various operating departments of the municipality, and between you and the people's elected spokesmen.

2. Creation of a bulwark against unfair criticism. A water works, whether privately or publicly owned, controls a vital necessity. Such an institution can always be made a target for attack. Public knowledge of the truth is the surest defense against damage from unjustified abuse.

3. Building protection against unwarranted political meddling with water works methods or personnel. This is a matter of paramount concern to water departments functioning as a part of municipal governments.

4. Establishing support for programs and policies. If, to take a very simple example, everyone understands why conservation of water is essential during a prolonged drought, restrictive regulations will be accepted in good spirit. When less easily understood issues are at stake, general acceptance of the fairness and wisdom of your policies becomes even more important.

5. Establishing support for anticipated major expenditures, involving public appropriations or borrowing, in order to secure water works extensions or improvements. Although such projects may become controversial issues, particularly when large commitments are called for, a sound foundation of public understanding will smooth the way.

Who Must Do the Job

Granted that well informed and sympathetic public opinion is desirable and even necessary, who is going to do the educating and informing—and how?

A water works information program must be a local program, developed to meet local conditions, handled by someone on the scene. And it must be factual, reflecting your practices and policies. Water utilities are inherently local in character. Even where there is outside ownership, the physical properties of water dictate a highly localized operation. No other type of utility is so directly affected by local conditions. Moreover, the complete dependence of the community on water has always made water supply a matter of special concern to local governments, with the result that most water utilities function as departments of municipal government.

This, in particular, serves to thrust responsibility for a water works information program directly on your shoulders, as the executive in charge.

No outside influence can do for you what you need to have done. You must build your story around your operation, address it to your public, and employ means available in your community. Nevertheless, just as you are guided by broad engineering principles in solving local engineering problems, so can you be guided by broad public relations principles that will prove helpful in determining local action. Such principles, if adjusted to meet existing conditions, can be applied to communities of all sizes.

It is important to remember that people are moved by the same basic human urges and desires whether they reside in a rural village or a great metropolis. The chief difference is that, in the small community, influence can be exerted directly, through personal contact. As communities become larger, direct contact becomes increasingly difficult, and devices for reaching people indirectly must be increasingly employed. But the basic considerations do not change.

One more general point should be made. An effective public relations program need not prove costly. Although many ways can be found for spending money advantageously, you do not need a big public relations budget to do a good job. This applies, particularly, if yours is a municipal water department. Planning, thinking, and making the most of opportunity are far more important than mere money.

Building on Firm Foundations

The community you serve is shaped by the character of its people, but it is also shaping their character in return. If you seek to inform and influence the people of your community, you must make sure first that you understand them and their interests, that you recognize what makes your community tick. Likewise, when your community has learned to respect you as a leader in general civic enterprises, your water works story will be accepted as coming from an authority and from a respected fellow citizen.

Perhaps the most helpful way to build up the right kind of basic information is to develop a series of questions. Suppose you start with a list of twenty:

1. How did the community get its start?
2. What is its history, how has it developed?
3. What natural factors—topography, geographical location, soil, and climate—have influenced its development?
4. What kind of people live there?
5. What influences are changing the character of the people?
6. What do they do for a living?
7. Are any influences changing the way they earn their living?
8. What are their homes like; where and how do they live?

9. Is the community growing, standing still, or slipping backward?
10. Why is it doing so?
11. If it is growing, in what manner or direction is this growth taking place?
12. What are the limits on its future growth?
13. To what degree can this growth be influenced or controlled, and through what channels?
14. Are the people proud of the community?
15. Why do they show either pride or lack of pride?
16. Are they civic-minded?
17. What is the state of the business leadership; who are the "mainsprings" among businessmen?
18. Are schools, recreational facilities, streets, and other community services good, adequate, or substandard?
19. To what degree does the community influence, or is the community influenced by, its surrounding region?
20. Are there any important outside influences—such as regional ownership of key industries, state laws, or freight rate differentials—which affect the community's well-being?

Other questions will suggest themselves, but these will serve to point up what must be your initial objective—an overall picture of the locality you serve and the factors you must consider in delivering your message to its people.

Candid Self-Examination

The goal of a planned public relations program is to create public respect and goodwill. But, as has been well said, "the smile of friendship palls if it releases a bad breath."

Before seeking to influence the public, you must first take time to subject your position to a careful and candid examination. Again, it may prove helpful, first, to develop a series of questions. Here are some that seem worth asking:

1. Is your water works system adequate for the community's needs?
2. If not, where does it fail?
3. What is the cause of this failure?
4. On the other hand, is your system conspicuously good?
5. In what respects is your service particularly good, particularly bad, or just mediocre?
6. What improvements in service could be considered?
7. What natural conditions affect the water supply available?
8. Is equipment in good physical shape?
9. If not, what repairs or replacements are required?
10. Is the rate structure proper?

11. Are there any rules and regulations which might seem arbitrary, unfair, or out of date?

12. Are bills rendered promptly and in proper form?

13. Are adjustments made promptly and with good grace?

14. Does satisfactory machinery exist for securing prompt and authoritative decisions from either the owners or the municipal authorities who ultimately control policy?

15. If not, where and how can improvements be effected?

16. What is your legal position; to what degree are practices and policies established by law?

17. Exactly what laws, charter provisions, and ordinances apply and what do they say?

18. Are any of these laws preventing you and your organization from doing a good job?

19. Do you have a planned program of extensions and improvements?

20. Is your program constantly kept up to date in the light of changing conditions?

Here, too, other questions will suggest themselves. The important thing is to develop a searching state of mind which will not be satisfied until a complete and honest picture of your particular setup has been provided.

If correctable faults are found, they should be taken care of before you start attracting public attention. If faults exist which you cannot correct because of natural or other conditions, or if their correction depends upon action by the community, then preparation of the proper case to present to the public must be carefully undertaken.

Regardless of causes beyond your control, you will always be held to a high degree of personal responsibility for the quality of the water provided and the character of the service rendered. It must, therefore, be your duty, both to the community and to yourself, to make sure that the public understands any situation in which your powers are limited or obstructed. But —and this is an important qualification—under all such circumstances, your case must be "watertight."

Those Who Must Help

Any analysis of your position will, sooner or later, lead to a consideration of the personnel of your department or company. It has already been observed that employees represent an important chain of influence in developing a public relations program and that the worker who is both satisfied with his job and proud of his organization is, in himself, an active force in the building of favorable public attitudes. A planned public relations program, therefore, must be prefaced by a careful analysis of the entire executive and working staff. Again, some questions suggest themselves:

1. Are key men, divisional executives and foremen, qualified for their jobs?
2. Is proper training provided for workers?
3. Is there an upgrading system and is it effective?
4. Are wages and salaries generally equitable?
5. Do workers have proper tools?
6. Are the most efficient methods of work being employed?
7. Granted that water supply is a 24-hr business and that emergencies must always be provided for, are either executives or workers asked to work unreasonably long hours?
8. Do effective channels exist for the swift and accurate transmission of orders, instructions, or information throughout the organization?
9. Does every individual understand the overall operation of the water system, and relate his job to it?
10. Can any changes in your own executive setup be made which would give you more effective control of personnel?

Satisfactory answers to these and similar questions will indicate that your organization is ready to reap full benefit from an active public relations program. Unsatisfactory answers will affect the success of your efforts in varying degree.

Much can be done to inform and interest the public even though your internal organization may be far from perfect, and you should not wait until perfection has been obtained. Correction of unsatisfactory conditions must, however, be made a major item in your program as it moves along.

Sound public relations call for a two-way effort—from the top down and from the bottom up. At the top must be leadership and the voice of leadership. Working up from below must come that day-to-day performance which gives evidence that the will to win public understanding and support exists not only at the top level but throughout the organization.

Surveying Lines of Contact

The purpose of a public relations program is to influence people. To do that, you have to reach them. Your next step, therefore, is to examine the avenues through which contact and influence can be established.

These avenues fall into two general classifications: direct contact and indirect contact. A speech before a luncheon club or an appearance before the town board or city council is an example of direct contact. A picture of a new dam in the newspapers, a statement on a billboard, an exhibit in your office window, paid advertisements, and announcements on water bills are examples of indirect contact.

An effective public relations program will make full use of both forms of contact. In fact, that is the purpose of planning public relations activities—to make sure that all devices available are employed consistently and with utmost effectiveness.

It is possible for a single activity to yield results through both avenues. If a luncheon club speech, for instance, is also broadcast and reported in the press, it has established both direct and indirect contact. As the various avenues of contact are explored, situations will suggest themselves which can be exploited in many ways.

Avenues of Direct Contact

Direct contact is secured whenever you appear personally before any individual or group and through your own speech and presence seek to win understanding and approval of the job you are doing. The principal avenues of value to you will include:

1. Day-to-day contact with your own personnel
2. Personal appearances before meetings of your employees, particularly those with whom you do not have daily contact
3. Meetings, both formal and casual, with the elected and appointed public officials of the community
4. Personal appearances before groups representing the various aspects and interests of community life
5. Participation in a program directed at informing school children about their water works system
6. Personal contact with key individuals in the community, especially those directing businesses which make use of water extensively and those in trades which have direct contact with the water system.

Avenues of Indirect Contact

Indirect contact is established when an individual reads, hears, or sees anything which makes him think about his water department. A planned public relations program seeks to jog his mind in ways that will make him regard the department favorably. The available avenues of indirect contact include:

1. Showmanship: landscaping, models, exhibits, physical improvements, smart-looking trucks, and so forth
2. Direct printed messages: notices on water bills, letters, bulletins
3. Newspaper publicity: news stories, pictures, and feature articles (in larger cities, this will also include material in local magazines, chamber of commerce publications, and elsewhere)
4. Paid newspaper advertising
5. Radio and television programs.

Choice of Avenues

Direct contact is more valuable than indirect, because the contact is definitely established. Where avenues of indirect contact must be employed, you can never be sure that you have gotten through to the intended recipient of your message.

In smaller communities, avenues of direct contact will be readily available; indeed, some of the devices for reaching the public indirectly may not exist. In cities, however, it becomes physically impossible to reach all those desired by establishing direct person-to-person relationships. While direct contact should be sought in every way possible, supplementary efforts for reaching the people as a whole must be employed.

This does not mean that only city executives will be interested in the use of indirect contact. Even if yours is a small community, you will want to be acquainted with these indirect means of reaching people. For you, too, may not always find it possible to see and talk with all those whom you wish to interest.

Delegation of Contact

If yours is one of the smaller communities, the responsibility for meeting and educating the public will be one which you will assume personally.

In larger cities, however, where the executive function must be divided among several individuals, the question of delegating public relations contacts will arise.

This point should be made: the importance of the public relations program is so great that it should always be a primary responsibility of the top executive. Where conditions may prevent direct, personal handling of the necessary public contacts, however, the job should be delegated to someone who, in the eyes of the people, will stand as a completely responsible spokesman. Such a spokesman should be a full participant in all policy-making activities and should have a sufficiently respected voice, both in the community and in the organization, to serve as a representative, as well as a cultivator, of public opinion.

Another method frequently employed places the top executive in the forefront as the directly responsible voice of the organization, but provides help in the form of an "inside" assistant who prepares the material used, handles many of the details involved in setting up indirect contact, and does the necessary research.

The purpose of this study is to guide you in the most effective use of the avenues of contact for influencing the public. In order for these suggestions to prove of utmost value, the preliminary work outlined previously should be undertaken. Knowledge of your community and your own position are keystones in the setting up of productive public relations activities.

2. Effective Talks—Your Best Avenue for Direct Public Relations Contact

The purpose of a public relations program is to influence people. The simplest and most effective way of influencing anyone is through direct, person-to-person speech. Everyone has said at one time or another, "If I could only talk to him face to face, I'd get this matter settled." We all realize that many factors besides our actual words are working for us when we talk things over with somebody in person. Facial expression, tone of voice, expressive gestures, and the opportunity to watch the reaction of our listener all help us when we can place our story before the other fellow personally.

If yours is a small community, you may enjoy the very special privilege of being able to talk over water works matters with most of your fellow townsmen in just this way, through a series of person-to-person conversations. Chances are, however, that even in a small town you will not be able to reach everyone in this direct manner, and the larger the community, the less possible it becomes.

The best substitute for person-to-person talk with individuals is the personal talk before a group. In fact, in some ways, the group talk has an advantage over personal conversations. When you tell an individual something, he may feel that you are talking only casually, that you may just be "expressing yourself" or only trying to draw him out on the subject. When you say the same thing before a group, the very fact that you tell your story or state your case to a number of people at the same time demonstrates stability and conviction. It implies that you are talking for the record and mean what you say.

The group talk may, therefore, be considered your most useful avenue for establishing direct public relations contact. And it has the primary virtue of being a tool which you can employ whether your community is large or small. If it is the latter, you can appear before practically all the organized groups in the community. In the larger cities, you will be forced to be more selective, and develop other devices, such as the newspaper report or the radio, to give your views a wider reception. But whether you live in a village or a great metropolis, personal appearances before your fellow citizens, assembled in groups, can and should be one of the cornerstones of your public relations program.

Audiences and How to Get Them

Your purpose in appearing before any group of people should be fourfold:

1. To acquaint them with the fact that you are a flesh-and-blood personality, who understands both his job and his responsibility to the public

2. To acquaint yourself with the kind of people in your community—to see what they look like, how they think, and how they act

3. To give them authoritative information about their water system, to show them how their well-being is tied in with the consistent performance of the water works, and to secure their support for your practices and policies, including, when necessary, expansion and rehabilitation programs

4. To secure, firsthand, their reactions to your point of view, the way you are doing your job, the policies which govern your actions, and the program for continuing or future development which you have outlined.

In short, the gains which accrue from a personal appearance before any given audience are of two kinds. People gain a better understanding of you and your job, and you gain a better understanding of the people you serve, who, in the long run, determine your success as a responsible community force. This applies whether you are an official of the municipality or head a private corporation.

Water, like gas and electricity, comes to the average citizen through physical devices completely devoid of personality. A faucet, unfortunately, cannot render "service with a smile," nor can it answer questions or do more than gurgle in response to criticisms. It is hard for the average customer to visualize the human thought and labor and executive direction which produce faucet performance.

The same difficulty works also in reverse. No gage yet devised can tell the engineer at the pumping station what all those people turning faucets are thinking about. Only when something goes definitely wrong is there a reaction. And then it is too late to do much planned and thoughtful directing of public opinion.

You will do well to think of your talks before community groups as implements for both giving and receiving. Keep your eyes and ears alert for audience reactions. Encourage questions and discuss them as fully and candidly as possible. Listen carefully to comments, both during the formal meeting and afterward. Do not make the mistake of mentally dismissing any question or comment as irrelevant or stupid. It may well hold the key to some blind spot in the public's attitude. Any question is an excellent one, even if it does not appear so to you at the moment.

You will find it particularly helpful to keep an "after-speech" notebook. As soon as possible after getting back to your desk, jot down the name of the group addressed, the circumstances surrounding your appearance, and the size and character of the audience. Then note the questions and the comments, including those which may not have made too much sense. As time goes on, you will find that you have assembled a highly valuable reference book and an important guide to what you say in the future. You will also possess an accumulation of evidence to employ on those occasions when you must state a case or make a point to your own employees, to municipal officials, and to other key individuals.

Audiences Are Waiting for You

As a water works executive, busy with the hundred and one details of keeping service going, it is quite possible that you may not have thought of yourself as a public speaker or even considered that people would be interested in hearing about your work. Either directly or indirectly, you may have created the impression that you really had nothing to say. Naturally, if such an impression exists, you are not likely to be called upon to make talks.

This impression can, however, be quickly dispelled. If you are a municipal executive, your very association with government identifies you as someone who should be expected, from time to time, to say something directly to the people. If yours is a private company, your position in the business community offers a similar springboard. There is hardly an organized group in any community which, from time to time, does not face program problems. You may have to do a bit of stage managing to secure initial invitations, but when you have spoken a time or two, word-of-mouth recommendation, plus such publicity as may have appeared, will keep the ball rolling.

It is, of course, difficult to advise on the exact steps which will be most effective in securing initial invitations in your particular situation. So much depends on you and your present relations with key people in your community. But here are a few hints:

You may well have friends to whom you can say quite frankly, "There are a lot of things that crowd of yours at the X Club ought to know about this town's water supply. Some day soon I'd appreciate a chance to tell them something about it."

On the other hand, you may be in a position where so candid an approach is undesirable. Then it is wiser to work through someone else, somebody whom you know well and who knows key members of the group you would like to address. Put it to your friend something like this: "I've been noticing that the Z Association is talking a lot about getting more industry for our town. We've got plenty of information in the water department that would be useful to them, and I'd be very glad to provide it. The next time you see Mr. A, please drop that hint in his lap."

In dropping such hints, emphasize your subject matter and its application to the group's interest rather than your own desire to make a public appearance. In other words, set the stage so that they will want to ask you to appear rather than merely accede to a request on your part.

Still another avenue might be opened up by investigating the speaking invitations received by other city officials, particularly those, such as the director of public health, whose work bears some relation to yours. Make it known—just how, of course, depends on your working relationships with these colleagues—that you will be willing to help out on those occa-

sions when they cannot accept. This is likely to prove a most effective channel for reaching neighborhood civic associations, parent-teacher groups, and other localized organizations.

Perhaps such strategic moves may go against the grain a bit, particularly if you are a modest person. But they are often necessary and are used far more than you may realize. They are part of the job of setting up an effective public relations program.

Logical Audiences

Every community—even the very small one—contains organized groups which meet together from time to time. The interests which bind them into such association cover a multitude of subjects, from the purely frivolous to the deeply serious. Obviously, there will be certain organizations which cannot provide the proper atmosphere for the presentation of a talk about water supply and water problems. Through scores of different types of clubs, associations, and community groups, however, runs a continuing interest in some phase of civic life or the well-being of the membership. Regardless of the exact purpose or function of the individual organization, it can provide a logical audience for a talk on some phase of your work.

Here is a list containing a number of the various kinds of organizations to be found in the average community. Every one of them offers interested listeners for the properly slanted discussion. You will undoubtedly think of others, but as a start, you might check on which of these are available:

1. Chamber of commerce
2. Business luncheon clubs—Rotary, Kiwanis, Lions
3. Parent-teacher associations
4. Women's clubs (they vary widely in fields of interest, but many devote themselves to civic, home, or family matters)
5. Professional and trade groups (some will be organized into definite associations; others may meet from time to time on an informal basis)—doctors and nurses, teachers and college professors, insurance agents, real estate men, chemists, engineers, store and factory executives
6. Neighborhood civic societies and improvement associations
7. Community and neighborhood public affairs forums
8. American Legion and other veterans' societies
9. Men's and women's clubs associated with churches
10. Store and factory employee clubs and associations
11. Municipal employee associations (particularly groups in departments that use or work with water and water problems—health, sanitation, fire)
12. Labor unions
13. Volunteer fire departments
14. Sportsmen's clubs

15. Organizations in neighboring towns that are within the community's watershed and are affected by its reservoir requirements
16. Youth groups, YMCA, YWCA, study clubs
17. School groups (see Part 5).

Your Wider Audience

In the small community, the audiences actually addressed will provide a pretty complete coverage of the people you wish to reach. In larger communities, however, this is obviously not possible. In planning talks, under such conditions, you should keep in mind the wider audience provided by those who read the newspapers, listen to the radio, and watch television.

Remember, however, that the mere fact that you are making a talk does not necessarily rate coverage by the press. There will be many occasions when you can use the identical material already employed elsewhere. In fact, the same talk can be used over and over before different groups. It is only common sense to work in this way. Do not expect reporters to cover these repeat performances. Do not call up editors and imply that you are going to say something important when you only intend to say the same things you have been saying all along. One or two such false moves will put you in a class with the boy who cried "wolf." Comes the day when you do have something new and interesting to say, the reporters will be conspicuous by their absence.

Plan your talks with the wider audience in mind. If you are to appear at an important occasion, one which, by its very nature, is covered by the press, try to develop some new slant, provide some new information, give a new interpretation to existing facts, make an important factual announcement, do something which will add to the significance of the event. If, for example, you know that an important occasion is coming up in a few weeks, and something interesting breaks in the meantime, try, if it is not contrary to the public interest, to hold back your comments or statement until you can incorporate it within your public address. This becomes a matter of even greater importance if the meeting is also to be broadcast or telecast.

Often, however, your policy will be dictated, not by the fact that an important event is impending, but by the circumstance that you have something important to say. Then you must make sure that the occasion selected for your statement is adequately covered by the reporters. Look over your speaking schedule, and pick the event that is most likely to attract press attention. A meeting of any major civic group would fall into this category, as would the weekly session of any of the important luncheon clubs. If no appropriate affair is scheduled, drop a hint or two. You will find that somebody will rise to the bait pretty quickly.

Prepare your key statement carefully. You may find it advisable to use much old and oft repeated material in setting the stage, or you may wish to

prepare a new talk from beginning to end. If you are using old material for background or wish to talk for the most part extemporaneously, have copies made of the key statement only. If your talk is new in practically all particulars and involves many facts and figures, have copies made of the whole manuscript. Then call the editors, or speak to the reporters who generally cover your department. Give them some clue to the nature of your remarks—just enough to make them realize that you will be creating news. Before the meeting see to it that the copies you have had made are handed to the reporters present. In short, make it as easy as possible for them to give you a good story.

Just one more word of warning: do not try to make too many key talks in the course of a year. Be content with three or four major appearances, three or four major newsbreaks in the papers. Editors and reporters alike get bored with the news hog who is always making impressive statements before public gatherings just to get in the headlines. Unless the pressure of events actually justifies a continuous campaign on some important subject, learn to hold your fire.

These are simple steps, but they are often overlooked. If you are in doubt, talk things over with your local editor or your favorite reporter. You will get sound and practical advice.

Things to Talk About

To have value, a talk must reflect your personality, discuss your operation, and deal with matters of concern to your community. No "canned speech" prepared by an outside source, even one like AWWA, can ever meet your needs. There are several basic talks, however, which lend themselves to a variety of uses, and, in the sections immediately following, outlines are provided for their construction. The important thing to remember is that your fellow citizens are primarily interested in their water system, not in water systems generally. They want to know about the problems affecting their water supply, not water supplies generally. They want to know what kind of a water works executive you are, not just to learn about water works management as a general field.

This does not mean that you should eliminate material referring to the general handling of water works problems, the general development of water systems, or the basic economics involved in supplying water. Such material helps give weight and background to the things you say about local conditions. Certain specialized groups in the community—engineers and chemists, for example—might be interested in many things you could tell them about other water systems and how they solve their problems.

In *Willing Water* No. 25 (December 1953), a number of general facts and statements covering various aspects of water service are provided for your use. You will find many ways of introducing this material into your

local story. You will also find that it will stimulate you to restate some of the facts in local terms. Use this material freely, but always remember your primary objective—to tell your fellow citizens about their water supply. With that thought in mind, consider the outlines that follow.

Talk No. 1: "The Story of Your Water Works"

This is a basic, nonargumentative talk; its purpose is to provide that foundation of information necessary for public understanding of the water supply system and how it works. It is the kind of talk that can be given almost anywhere and to almost anybody. It is primarily suitable for groups that are not too closely identified with civic affairs or that have not progressed very far in their study of community activities. A logical pattern for this talk is:

1. Introduction, relating talk to interests of group (see the following section, "Helpful Hints on Talk Building").
2. "What a dependable, safe water supply means to you." Cover quickly drinking water, washing, sanitation, and fire protection. Include mention of any industries which are heavy water users.
3. "Our town's water system—who controls it and how." If privately owned, explain nature of franchise and state or local controls in force. If a public authority of any type, explain exact relationship to municipal government and channels of public control.
4. "Where your water comes from." Name and locate sources.
5. "How it gets to you." Describe and locate major elements in distribution system—primary mains, reservoirs, tanks, and pumping stations. Carry through to service connection and on into water lines within home. (If talking to a neighborhood group within a larger community, trace the course of the water that comes to that particular section.)
6. "How we make it safe and palatable and keep it clear." Describe some of the things than can cause trouble with the water in your particular area and explain any harmless conditions that create needless public concern.
7. "How your water system provides fire protection." Discuss fire hydrants and how they work, the question of water pressure, and what the pumper fire engine does.
8. "Water rates." Explain who determines them, and how they are applied. Point out the cheapness of water. Include some of the comparisons given in *Willing Water* No. 25.
9. "Your water meter and how it works; your water bill and what it means."
10. Conclusion, in terms of the group's self-interest (how to employ water to greatest advantage in the home, how to conserve water intelligently, how to stop waste).

As you use this talk, you will find that certain elements possess more appeal than others. You will find variations in interest among different

kinds of audiences, and you will develop a sense of what to stress and what to glide over. You may also discover good reasons for changing the sequence followed here. But by marshaling your facts around this structure, you will have assembled, in orderly form, the substance of a sound, informative presentation.

Talk No. 2: "Your Water Works Looks Ahead"

This is a talk particularly suitable for civic and business groups which may be presumed to have at least some understanding of the basic functions of the water system. It can also be used when a second occasion arises to speak to some organization which has already heard the basic talk on "The Story of Your Water Works." Talk No. 2 will develop along these lines:

1. Introduction, relating talk to interests of group.
2. "The water system and the community." Make the point that water supply is the life blood of the community. Stress the dependence of every man, woman and child, as well as of community institutions, on safe, sure water service. Amplify with illustrations from daily life.
3. "Our town's water system—who controls it and how." (For details, see Point 3, Talk No. 1.)
4. "How our town and its water system grew." Explain that the present water system is the result of growth, just as the present community is the result of growth. This is a good opportunity to add some color to the talk; tell one or two early water works experiences, or describe early fire-fighting methods. Sketch briefly history of community.
5. "Our present water supply and service facilities." Review briefly nature and location of water sources. Describe and locate major elements in distribution system.
6. "How our community is growing." Describe briefly location of new residential areas, new industrial sections, and new business districts. Examine trends in growth.
7. "How the water system is keeping pace." Mention briefly new facilities provided or in course of construction. Describe margin for future growth provided by present facilities and water resources.
8. "What we are doing about the future." Mention service additions contemplated, new water resources available for development, and plans for safeguarding future supplies of water.
9. Conclusion (use whichever is applicable): "Your water system is ready to meet what the future will bring," *or* "It is time you realized that future growth will tax your water system greatly, and your support must be given to a speedy expansion program."

Because this talk proceeds from mere reporting to interpretation and prediction, it can, under certain conditions, approach the controversial. It need not do so, however, if a temperate and reasonable approach is maintained throughout.

Talk No. 2 possesses particular importance to you personally. The nature of the subject and the opportunity it offers for revealing your understanding of the community and its problems provide an excellent vehicle for building confidence in the job which you, personally, are doing.

Talk No. 3: "We Ask Your Support"

This is a talk for use when you are actively seeking support for or against some program or proposal which requires public approval—either directly, through a referendum, or indirectly, through the action of the people's elected representatives. The talk can be built, according to the nature of your audience, with either Talk No. 1 or No. 2 as a foundation, in the following manner:

1. Introduction: a concise, clear statement of the issue at stake and how it affects the direct interests of the group concerned.

2. "It is your decision." Explain how the public is making the decision, either at the polls or by the views conveyed to representatives.

3. "It is my responsibility to give you information that will help you make a proper decision."

4. The background of the situation (review briefly Points 2–8 from Talk No. 1 or Points 2–8 from Talk No. 2).

5. "Now we find ourselves facing this problem." Restate the issue in terms of a problem.

6a. For positive support: "The course of action now proposed solves that problem." Explain just what it is that you want to do, how it will solve the problem, and what results can be expected.

6b. For negative support: "The course of action which is now being proposed will not solve that problem." Explain exactly what has been proposed, how it will fail to solve the problem, and what adverse results can be expected.

7. Conclusion: "Anything affecting your water supply affects you." Briefly review people's dependence on water. Make final statement of issue and its effect on community's ability to provide water. Ask for thoughtful consideration of the question and action.

Talk No. 4: "Your Water Supply and Business"

This is a talk primarily designed for use before business groups—chambers of commerce, businessmen's luncheon clubs, trade associations, and the like. It can be worked out approximately as follows:

1. Introduction, relating talk to interests of group.

2. Describe the general public uses of water, reviewing briefly those uses everyone knows.

3. "But all these everyday uses account for only part of this community's water consumption." Explain how business and industry are users of water. Give examples, with figures wherever possible, beginning with

those businesses which would be most familiar and obvious—laundries, restaurants, hotels, for instance.

4. Include hospitals and other institutions which would be classified as commercial users.

5. Proceed to industries in which water is employed extensively, but where use is not so well known to public. (Check your list of commercial customers for all such users.) Explain some of the interesting ways in which water makes certain industrial operations possible (such as in railroads, textile mills, soft-drink bottling plants, or paper mills).

6. Translate figures on industrial consumption in terms of home use. (Example: the X Factory uses enough water in a day to meet the requirements of 500 households for a year.)

7. Trace quickly development of community, particularly from business point of view. Give comparative figures of decade-by-decade increase in water consumption by commercial users.

8. Show how business growth has affected and been affected by water supply system.

9. Review present condition of water supply and water works system. Refer to recent improvements which may bring about better water service to home and industry, better fire protection, or better domestic service. Discuss relation of system capacity to current commercial requirements.

10. Conclusion (use whichever is applicable): "Your water works is ready to accommodate more industries; we can support any efforts you may be making for business expansion," *or* "Before contemplating any drive to bring new industry here, you had better help secure improved and enlarged water facilities."

This, too, is a talk which can do much to benefit the reputation you possess in your community. It provides an excellent opportunity to demonstrate your knowledge of local business conditions and your interest in helping businessmen think straight about the future.

A variation of this talk, using the same material but slanted to the workers of the community rather than the employers, can easily be prepared. It also lends itself to use before groups of municipal employees.

Talk No. 5: "Water and People"

As you continue making talks, opportunities will from time to time arise for a talk somewhat different in character—one in which you tell more about the science and business of water works management and less about purely local conditions. Certain specialized professional groups may like such a talk better under any circumstances, and some business groups would also prefer it, particularly if you have already told them about local conditions on a previous occasion.

You will find much of the material required for this talk in *Willing Water* No. 25. You might organize it something like this:

1. Introduction: "the myth of pure water." Everybody asks for it, but nobody wants to drink it.

2. "Safe, palatable water is the goal of all water systems."

3. Explain what gives water its taste, and the various methods available for changing taste.

4. "Keeping water safe." Show the dangers and how they are met.

5. "Clear, sparkling water." Describe color problems and how they are solved.

6. "How soft? How hard?" Review problems growing from mineral content, and efforts to create balanced water.

7. "Delivering water." Review various types of water sources. Explain how they are controlled and how water is distributed.

8. "Water economics—no other commodity delivered so cheaply." Compare costs of other commodities.

9. "An important business." Show place of water works operation among all American businesses.

10. "And a responsible business." Conclude with reference to AWWA standards.

Only the Beginning

The talks outlined here are provided, not as a list of "approved" speeches, but as a start in developing material to use before your local audiences. Many subjects will suggest themselves to you, subjects much better and more appropriate for your use than any presented here. The purpose of these outlines is to point the way and provide some guidance in the organization of material. Use them as freely or as little as you desire.

Helpful Hints on Talk Building

One of the key reasons for making talks before groups of your fellow citizens is to provide them with the opportunity to know the kind of a person you are. In planning your talk, and while speaking, be yourself.

If you are a slow talker, do not try to rush. Cut your material, instead. If you are a fast talker, remember, of course, to consider your audience and try to avoid speaking too quickly. But concentrate on good, crisp diction, and prepare your material to provide a maximum of short, snappy sentences. The combination of rapid speech and long, involved sentences is particularly hard to follow.

If you are accustomed to using simple language in daily speech, keep your talk simple. Do not try to introduce fancy words or involved sentences. You will have to watch one thing at all times: *Keep away from technical language.* If you must use technical words, be careful to explain them in familiar terms.

Notes Versus Written Speeches

It is always better to talk to an audience rather than read to it. Your listeners want to feel that you are looking at them while they are looking at you. Therefore, try to train yourself to speak from notes.

Notes should not be full speeches. They should give you just enough of what you want to say to keep your talk moving from point to point smoothly. Above all else, notes should be easily readable. This means that, unless you are very farsighted or are assured that a reading desk will be provided, typewritten notes will not be too useful.

Here is a suggestion that many speakers have found particularly helpful. Prepare your notes on regular $8\frac{1}{2} \times 11$-in. (letter-size) sheets. Organize your talk in outline form. Then, with India ink, print your main points in letters about an inch high. Print—or, if you have a very legible hand, write—secondary points in letters about half an inch high. Notes of this type can be easily read when you stand at a luncheon table or behind any ordinary desk. If it is necessary to include any material which must be read, such as statistics or a key statement or quotation, this material can be typed and placed in its appropriate place among the page-size notes. When you come to it, you simply pick it up and proceed to read.

With a talk that you give often, your dependence on these notes will become less and less. You will find yourself eventually proceeding from point to point in orderly fashion, with only an occasional casual reference to your material. Eventually you may dispense with notes altogether.

When working up a new set of notes, or when reviewing notes that have not been used for some time, rehearse your talk several times before making a public appearance. With your notes as a guide, go through the talk out loud, timing yourself as you do so. For the average talk, aim at a 20–25-min length. Make sure that your whole talk—as you want to give it—fits into the time allotted. Check to be sure that the earlier parts are not taking too long. Cut them if they are.

Do not try to memorize a talk made from notes or worry if you use slightly different words in succeeding rehearsals. Your objective is to fit the general pattern of spoken speech to the outline which you have prepared.

Despite the desirability of talking from notes, you will, on occasion, feel it more desirable to use a written manuscript throughout your talk. This will be particularly true when you are speaking officially on a matter of special importance and when it is essential that you be quoted correctly. It will also be generally true of those occasions when radio or television coverage is expected.

In preparing your manuscript for a talk which is to be read, allow 2 min reading time to the usual $8\frac{1}{2} \times 11$-in. page of double-spaced typing. Thus, a ten-page talk will take about 20 min, and a thirteen-page talk about 25 min or a few seconds over.

When you do use a written manuscript, rehearse it a few times aloud before your public appearance. Get the feel of the words sufficiently on your tongue so that you can look up frequently without feeling panicky about losing the place.

Just one more point. If you do read your talks, *do not apologize* for doing so. Simply go ahead and read.

Things to Find Out in Advance

Prior to appearing before a group, it is always desirable to find out a few things about the group itself and the circumstances of the meeting. When an invitation to talk is extended, find out the exact name of the organization, who its key officers are, its purpose, and the general character of its membership. Before accepting, make sure that the person or committee inviting you knows the general kind of subject matter with which you are qualified to deal and has some awareness of the type of talk you will give.

Also, have a definite understanding on the amount of speaking time at your disposal. If that question is tossed back to you, specify a definite period—one you intend to stick to. Find out, too, how much, if any, time will be allowed for questions.

If there are to be other speakers, find out just where you fit into the program, and how long the whole proceedings are expected to last. Try to avoid a spot just after a long talk by another speaker. But if, for any reason, it is desirable to appear under such conditions, plan to make your remarks short and to the point.

If the organization is completely unknown to you, it is always wise to check on its standing before accepting an invitation. In larger cities, men in public office are sometimes embarrassed by appearing at a function which, in the light of later events, they would rather not have attended.

Having accepted, go to a little trouble. Learn enough about the interests of the group to make intelligent reference to them when you actually appear. If it is a neighborhood organization, find out a bit about the section, its interests, its problems, anything which the group in question is doing to better the neighborhood.

Inform yourself, also, concerning the character and facilities of the meeting place. Find out its size, how the audience will be grouped, whether microphones will be used, whether or not a reading desk is available. If it is an important meeting and you are unfamiliar with the room, get there early, try out the acoustics, and check the pitch of your voice. All this may seem to entail a good many petty and troublesome chores. But it is just such attention to details that makes the actual talk go over with maximum effect.

There is one minor cross which every speaker must be prepared to bear, and you will do well to accept it philosophically. That is the badly organ-

ized meeting whose presiding officer permits time to be frittered away needlessly and often foolishly. Learn the art of adjusting your talk to diminishing allotments of time. As you see precious minutes being wasted, figure in your own mind what parts of your talk can be omitted or condensed. Try to make sure that you will not be the one responsible for an overlong session.

At the same time, however, remember that you are talking to your own neighbors, to the people you will have to live with through the months and years ahead, and that the reason for your appearance is to win friends. Resist firmly all temptation to comment on the fact that curtailments have been forced upon you. Be careful, too, that no resentment shows, either in your tone of voice or in the expression on your face. Be as pleasant and as gracious to the bungling chairman, no matter how irritated you may feel, as though he had put you before your audience precisely on schedule. If you must give a condensed version of your talk, behave throughout as though it represented exactly what you had planned to say in any event.

The Introduction

As a speaker gets to his feet, every member of his audience has just one question in mind: "Will this man say something of interest to me?" The big job which the introductory portion of any talk must accomplish is to give each individual listener an assurance that the answer is to be "Yes."

The one thing that interests everybody most is himself. The effective introduction, then, will quickly tie in the subject matter of the talk proper with the interests of the listeners. This is one reason why it is so desirable to investigate the character and interests of every group in advance of your appearance before it.

Introductions of this character need not be long or tortuous. In fact, the more direct they can be made, the better. In telling people about their water supply, you are, of course, discussing a matter of the most direct concern to their well-being. It should not be difficult to point this out in a few words. Here are a few samples:

To parent-teacher group: "You are brought together by one common interest—concern for the healthy mental and physical development of your children. One of the fundamental requirements for a healthy community, for healthy children and healthy grownups, too, is a dependable supply of safe water. That is why I so appreciate this opportunity to reassure you on that point."

To neighborhood civic club: "Your president, Mr. X, has been telling me some of the things this association is doing to make this a better and happier neighborhood. I feel specially privileged, therefore, to share in the discussion this evening. For I know that, in telling you about the community's water system, I will be talking to people with an alert interest in all that makes our town a good place in which to live."

To business group: "As businessmen, you have learned that many factors control the markets for your goods, the attitudes of your customers, the prosperity of your community. You have learned that everything which affects the well-being of the people of this town has some effect on your business affairs. It is from this point of view that I would like you to consider the picture I am going to give of our water system and its operation."

Inviting and Handling Questions

Whenever conditions permit, encourage questions from the floor. Have the chairman invite them, invite them yourself during your opening remarks, and repeat the invitation somewhere near the end. Also, if you make some generalization which you do not want to amplify because it will slow down the pace of your talk, throw in some remark like: "That's the general picture; I don't know how interested you are in the details, but I'll be glad to answer any questions on that point later on."

It is good strategy, too, to arrange with the chairman in advance to invite questions directly from two or three key people the moment the talk is over. Keep an eye on any members of your audience who may look quizzical or dubious as you go along. If the question period is slow getting started, carry the ball yourself. Pick out one of "doubters" and say something like this: "For a moment back there, I thought that gentleman at the end of the second table wasn't quite in agreement with me. Perhaps, sir, I didn't make myself quite clear. How about it?"

As a rule, such prodding is necessary only to break down the wall of self-consciousness which usually afflicts people in a public place. Once one or two questions have been asked and pleasantly answered, others will keep coming. In handling questions, remember these hints:

1. Treat every questioner and every question with respect. Even if you have already provided the answer in your talk, restate it, using other words or giving an example or illustration.

2. If the question is of a character likely to throw the whole discussion off its course, handle it in this way: "That is a question I would like to answer, but it is pretty involved. I would like to call at your office, if I may, and give you the full story."

3. Do not try to bluff when you are asked something you cannot answer. Audiences have a way of responding most favorably to a candid admission of lack of knowledge. If the question covers something which the audience may think you ought to know, however, be careful not to leave an impression of smug and satisfied ignorance on your part. Throw in a sentence of explanation, such as: "Water works engineers everywhere are studying that problem and still haven't found a satisfactory solution. No one will be happier to get an answer than I," or: "Frankly, that is a situation which has never arisen here, and it doesn't look as though it ever would. We've just never had occasion to look into it."

4. Welcome answers, as well as questions, from the floor. If a pertinent discussion results, and you learn something new and helpful, say so.

Jokes and Stories

There is nothing quite so listless as the laughter which greets a joke dragged into a speech without reason or point. The speaker who says he is reminded of a story, and then produces one with slight or no reference to the subject in hand, has harmed rather than brightened his presentation.

There is, of course, definite virtue in beginning a talk with some light touch. A well told story in the middle of a talk—provided it is appropriate—can also be very helpful. It changes the pace for a moment, brings a brief holiday from the more serious business at hand, and refreshes the minds of the listeners. But not everyone can tell jokes well, and there is not always an appropriate story to illustrate the point the speaker is making.

Be guided by the principle that your first obligation, to yourself and to your audience, is to be yourself. Try out jokes very cautiously. Pick only stories that make a real and pertinent point. If they go over, keep using them. If you find that your audiences do not respond, be honest with yourself and face the fact that you are better qualified to speak straight and direct.

An audience will always have more respect for the speaker who gives it a well organized, straightforward talk than for the amateur thespian who clutters up his remarks with poorly told and pointless "funny stories."

3. Building Employee Interest, Understanding, and Enthusiam

Your employees affect the success of your public relations program in three ways:

1. *Through the performance of their work.* If they do poor work, all your efforts directed at winning public confidence will be nullified by their actions. If they do good work, they add to your success.

2. *Through their on-duty contacts with the public.* Their courtesy, their promptness in handling requests and securing decisions, their ability to provide information and answer questions, and the sense of responsibility which they convey to the individual customer and to the public at large are important factors.

3. *Through their off-duty attitude toward their job and the water works organization.* This is revealed in what they say—and what they leave unsaid—when talking to relatives, friends, and neighbors.

Obviously, employees constitute a most important factor in any well formulated public relations program. Each individual, on the job and off, is the center of a sphere of influence which can work for or against you.

The building of employee interest and enthusiasm, therefore, should not only be one of the first undertakings to engage your attention but should also remain a source of continuing concern at all times thereafter.

Making Sure of the Foundations

There are many devices available for informing your employees, for giving them a better understanding of their job and their responsibilities, for developing interest and building enthusiasm. But none of them will succeed unless your employees, on the whole, feel that they work for a fair and decent employer.

It is not the function of this study to delve deeply into the vast and often controversial question of labor relations. The success of any attempt designed to draw employees into the overall public relations effort is, however, so completely dependent upon the basic attitude of the individual worker toward his job and his employer that some consideration must be given to attitude-shaping conditions.

Elements of a Fair Personnel Policy

The smaller the organization, the easier it is for the responsible head to know his people and sense their attitude toward their work. As organizations grow larger, as it becomes increasingly difficult for the man at the top to know employees as personalities, he must place increasing dependence upon the basic principles that make for good human relationships.

As guidance, therefore, this section includes a checklist covering the elements generally considered essential to a fair personnel policy. In the smaller community, where the whole water works operation is in the hands of a compact group of fellow workers, so formal an analysis may not be called for. But even under such circumstances, the responsible executive may find the list helpful. Although you may take it for granted that "you know your boys like a book," a careful, step-by-step analysis may reveal weak spots hitherto overlooked. It is possible, you know, to be so close to people that you cannot see them whole.

Try seeking answers, then, to the following questions:

1. Is hiring done with a view to securing the kind of people who will make good permanent employees, capable of advancement?

2. Is each employee properly introduced to the job and to the organization? Are working conditions and regulations explained to him when his employment begins? Is he encouraged to ask questions about his job?

3. Are probationary tryout periods for new employees provided, under adequate guidance and uniformly administered?

4. Are employees encouraged to display initiative and resourcefulness, and is prompt recognition accorded special efforts and the exercise of sound judgment?

5. Is there provision for vacations and excused absence? Are holiday schedules so established as to give all employees a square deal?

6. Are rules and regulations fair, thoroughly understood, and practical to administer? Do employees know the reasons for these rules?

7. Does proper and fully functioning machinery exist for examining and disposing of grievances promptly and fairly by responsible executives?

8. Is a job inventory taken regularly, with each employee reporting on his exact daily, weekly, and monthly duties?

9. Is the job inventory subjected to careful evaluation? Are inequalities carefully studied and adjusted?

10. Are rates of pay comparable with those which prevail in the community for similar work? (The factor of guaranteed annual employment in the water works industry is, of course, important to weigh when seeking answers to this question.)

11. Are lines of authority clearly defined? Does every employee know exactly to whom he is responsible and who, in turn, is responsible to him?

12. Are methods and materials checked regularly, to make sure that employee performance is not being penalized by conditions beyond the workers' control?

13. Are the ordinary decencies observed? Are washrooms kept clean and orderly? Are lunchrooms clean, with proper facilities for garbage disposal? Are lockers in good condition?

14. Is consideration shown employees who must work under rigorous weather conditions and in emergency situations? Are such men provided with all necessary equipment and is careful thought given to their comfort?

If an honest self-examination reveals generally affirmative answers, your organization is in a good position to benefit from a program of activities designed to stimulate employee understanding and enthusiasm. If the answers are largely negative, you would do well to seek improvement in these basic conditions promptly.

This does not mean that you must wait for the "perfect" labor relations setup before undertaking public relations work. In fact, many of the devices discussed further on will, in themselves, help achieve your labor relations goals. It is important, however, that you possess a correct picture of the personnel situation and keep your interest-arousing activities in balance with your workers' basic attitude toward their jobs and the organization as a whole.

Union Relationships

Today unionization is a definitely accepted factor in industrial relationships. Even though your water works system may not be unionized, you should be prepared to deal intelligently with worker groups.

Your all-important endeavor in working with labor unions or other employee associations must be to secure complete and sympathetic under-

standing of the fact that the water works industry is charged with a responsibility that transcends all points of difference between labor and management. Life itself is dependent upon the faithful discharge of this obligation. It cannot be forgotten for a single hour in the day.

It is vital, therefore, that a "no strike" understanding be the foundation upon which every union relationship is built. Because the strike is labor's one powerful weapon, you, in return for this concession, must be prepared to offer arbitration completely fair to labor. You must demonstrate, thereafter, complete good faith in your acceptance of the arbiters' decisions.

Words on a contract, however, are merely the beginning of understanding. By the simple assumption that you expect union-management relationships to be based upon mutual respect, you will find that such respect, in fact, does develop. Once that state of mind has been established, cooperation in word and act is not far away.

First Goal—Informed Employees

Your workers cannot take any special interest in water works unless they know what the water works is all about. It is important to remember that mere employment in some job connected with water service does not automatically confer such knowledge and that it is management's responsibility to point out the significance of the overall team job and the importance of each individual's contribution to it. It is your job, in short, to keep your employees informed.

A number of ways in which this can be done will be dealt with here. Some will be appropriate for your use, others may not. The exact procedure you follow is not important. What is important is that you possess an awareness of the value of informed employees and that you take measures to provide proper information.

Seeing Is Believing

Of all the devices available for developing employee knowledge, none surpasses the actual inspection. It is, therefore, suggested that some procedure be established whereby every employee, regardless of his individual responsibility, can be taken to the various plants, installations, and offices involved in the water works operation. Such trips should be looked upon as serious educational experiences and should be scheduled within the employee's regular working hours. It is well for inspection groups to be briefed in advance concerning the operation they are to witness, and department heads or qualified staff members should be present during the actual inspection to explain exactly what is happening and why.

In determining the various units of the system which should be visited, you will, of course, be guided by the extent of your particular water works. In general, the logic of the situation would indicate inclusion of the follow-

ing: water sources (impounding reservoirs, intakes, wells); pumping stations; treatment plants and laboratories; elevated tanks and distribution storage reservoirs; maintenance department; business office (meter-reading, billing, collecting, customer contact departments).

It should be remembered that the question is not merely one of permitting inside or office workers to see what goes on outside. Each group of outside employees will also find much of interest in the work of other outside groups and will find it worth while to see what happens in the office.

Further interest in the inspection program could be secured by arranging with a house builder or contractor to permit a visit at the time when the plumbing lines are being installed in a new residence. Visits to some of the industrial and commercial plants using large quantities of water, as well as to fire department demonstrations, might also be included.

The procedure for setting up tours of inspection will vary, naturally, with conditions. In a smaller organization, you may simply make it a practice to take various employees with you as you make your periodic inspections, explaining things informally. Even so, it might be a good idea to prepare a checklist of your personnel, just to make sure that each individual is taken to each unit in the system.

In larger organizations a more systematic plan will be required. You will probably find it desirable to set up a regular schedule of quarterly or semiannual tours and provide for all persons hired since the last series of trips to make the rounds.

Keeping Yourself and Others Posted

As a primary device for keeping yourself and others posted, some form of regularly scheduled meeting is recommended. In smaller organizations, where almost every employee fulfills a separate, exclusive function, you may find it practical to hold meetings with your whole personnel. Generally, however, it is considered desirable to restrict meetings to supervisory and professional staff members. The makeup of your meeting group is a matter which you will decide in the light of your particular situation, bearing in mind that it should be representative of all phases of your operation.

Regular meetings provide occasion for constant review and discussion of all the things which both you and your associates should know—service improvements, new projects under consideration, community conditions affecting service, difficulties overcome, good performance records, and problems requiring consideration. These meetings bring group thinking to bear on such questions as may be raised, and give each person present a better understanding of other people's jobs and responsibilities. Viewed from the public relations angle, they provide a master channel through which information, commendations, and instructions can be passed along to everybody in the organization.

Only one warning need be voiced. In meetings with supervisory personnel, it is important that they feel their obligation to carry word to their subordinates. It might be well to close every meeting with a brief charge, reviewing those particular items you want all water works personnel to know about and reminding those present of their responsibility in this connection.

Short Courses for Personnel

Effective as a continuing educational activity is the short course, developed in a series of from four to six talks. A number of general topics suggest themselves. One, of course, covers the water works operation itself, with various departmental representatives explaining the work of their particular divisions. Even though most employees may have, at one time or another, inspected the various units of the system, such a course, repeated annually, would keep everybody informed of the latest developments —system extensions, new equipment, new working methods, new control and protection techniques.

Another series of talks might be developed around the relations between the water system and other municipal services—fire, sanitation, park, building inspection, and so forth. Still another might cover the various industrial uses of water, with executives from customer companies explaining how their operations depend upon water, how much they use, and so on.

A fourth series might be developed around water in the home, with talks by architects, builders, plumbers, home equipment salesmen, and real estate men. A fifth might cover conservation and flood control, and might bring before the group state or county conservation officials, engineers, and the like.

The value of such short courses, if not given too often (two or three series a year should be the maximum), is twofold: they provide information which directly or indirectly applies to the jobs your people are doing, and they give your employees a sense of the importance of their work and of the responsibility which they share.

Forewarned Is Forearmed

There is one special type of information which should be provided all employees as speedily and as accurately as possible. That involves situations which may suddenly draw the public's attention to the community water supply, particularly when safety matters enter the picture.

Try, whenever possible, to give personnel advance warning of any conditions which may cause the public to question the safety or adequacy of the water. If, for example, heavy spring floods are in prospect, review with your personnel exactly what can happen, what will be done to meet the situation, and what they should say to customers and people generally.

The same applies to a serious drought or to any other anticipated departure from the normal.

If, on the other hand, a condition arises unexpectedly, make sure that one of your first steps is to get an authoritative statement out to all employees, whether they are in jobs involving public contact or not. If you must make some announcement to the public, be sure that your staff is given the pertinent facts simultaneously or, better yet, in advance. It is always bad public relations policy to permit a situation to arise in which the head of any organization serving the public interest makes an important public announcement while the members of his organization remain completely uninformed about the nature of his statement.

Advance information should also be given all personnel when any major issue involving the water system—such as an important and costly extension of facilities—is about to receive public attention. Every employee should know what is being planned, why it is needed, and what it will accomplish. Obviously, you will not wish to broadcast every move you contemplate making, but, once your program has reached the stage where it is to be publicized, the members of your staff will be flattered and will show greater interest in the success of your proposals if they hear about it first. The margin of time involved may be only a few hours, but the fact that they "know all about it" when relatives and neighbors ask questions after the papers have come out will add substantially to their sense of importance.

Starting the New Worker Right

The job of providing the individual employee with an understanding of the water system and its operation logically begins with the hiring interview. The question of securing permanent employees, capable of advancement, is one of the most important which confronts the water works industry today. To make sure that job candidates possess the desired qualifications, it is necessary that they be given some overall concept of the field of work which they propose to enter.

In the hiring interview, a clear statement should be made covering the duties of the particular job under consideration and its relation to the system's operation. Terms of employment, working conditions, essential regulations, and vacation and holiday schedules all should be outlined in the light of a water works man's very special responsibility to the public.

Elements of Indoctrination Talk

Once an applicant has been accepted, the opportunity to provide a degree of real indoctrination is too golden to be passed by. It should become an established procedure handled by responsible members of your management staff.

The elements of an indoctrination talk, whether given to an individual employee or to a group, pretty much resemble those of a talk to an outside

audience, following the course of the water from its original source to the faucet in the home and the hydrant in the street. It would be desirable to utilize a map showing the physical layout of the system in relation to the community, and photographs of reservoirs, pumping stations, and other installations would also prove helpful.

After this introduction, the new employee's job could be reexamined and his part in the scheme of things firmly established. At the same time he should be shown the human side of the organization and told something about the executive control of the system. If it is a branch of municipal government or a public authority, its relationship to the municipality should be defined.

As a final step, there should be a second review of the things the worker wants to know about his job—whom he works under, where he is to work, when and how he is paid, his wage or salary rate, holiday and vacation policies, major regulations, and safety rules. This recheck reassures the new employee of his understanding of what has been agreed upon and provides an opportunity to correct any misconceptions he may have. Such a session should occur when the worker first reports for duty and should be conducted for the benefit of every new staff member—office worker, technician, meter reader, or street crew man.

Your procedure from this point forward will become a matter of adjustment to your particular setup. In a small organization, the educational process can be carried on quite informally, through casual chats with the new worker as he goes about his labors. In a very large organization, you may find it desirable to establish regular classes, somewhat along the lines of the "short-course" groups described earlier. Or you may wish to have several further office talks with the individual employee.

In any event, it is suggested that every new employee be brought in for at least one more-or-less formal interview within 2 or 3 weeks after his employment. By that time he will have gained enough experience to understand a more detailed discussion of the water works operation and will probably have begun to formulate some questions of his own. These he should be encouraged to ask.

Policy Codes and Employee Manuals

The degree to which you use prepared codes, rulebooks, and employee manuals will depend upon the size and physical extent of your organization. The more widely scattered an operation, the more important such material becomes. Yet even in small and integrated systems, there is much to be said for the written guide. Its value rests not only on the information which it gives to employees, but also on the clarification it brings to executive thinking. When you actually have to put in writing such items as policies, job functions, job relationships, working procedures, and rules, you are forced to examine and weigh them, to make sure that conflicting

statements are resolved, and, in general, to analyze your organizational setup, personnel ideas, and procedures.

This material may be merely typed and assembled in a loose-leaf notebook, so that items can be changed as conditions require. It can be mimeographed at very little expense, with copies distributed to all employees. Or it may prove desirable to prepare two types of material—a loose-leaf policy book for each department head, kept up to date at all times and providing information and guidance on every phase of the water works operation, and a general employee's manual.

Employee's manuals have come into increasing use as business enterprises have grown too large to maintain management contact with individual workers. The aim is twofold: to give the individual some understanding of the organization he works for and to provide authoritative information on the terms and conditions under which he works.

A water works employee's manual would probably cover the following essential topics (others might be required to meet particular situations):

1. Welcome to employee and explanation of responsibility.
2. Significance of water to people and to community life.
3. Description of system in relation to your community.
4. Brief history of system's growth and development.
5. Plan or map showing how water is obtained, moved through treatment plants, stored, and distributed.
6. Location of all critical installations.
7. Water meters and how they work.
8. Relation of water works to other municipal services and functions.
9. Departmental setup of system and lines of authority.
10. Departmental standards of performance.
11. Terms of employment, method of payment, hours, overtime, and holiday schedules.
12. Rules and regulations, and care of equipment.
13. Safety rules and reporting of accidents.
14. Action in emergencies.
15. Vacation and sick-leave policies.
16. Retirement and pension plans, hospitalization, and group insurance.
17. Employee activities.

Such a manual, simply and clearly written, is of special value in helping new workers learn the ropes. Utilized as a textbook, it will simplify and shorten indoctrination sessions. At the same time it serves as a continuing guide and conference book for all staff members. It can be dressed up with illustrations and color and attractively printed, or it can be produced by one of the less expensive photo-offset or multigraphing processes. The important thing is that the book as a whole should sound sincere and prove truly helpful. Those qualities will make even the simplest job effective.

Fact Sheets and Information Bulletins

Memos to the staff are a part of almost every business operation. Too often they consist of routine notices or criticisms, but they can be transformed into important channels for the distribution of valuable information. Regardless of how effectively supervisors convey facts, instructions, and commendation to those under them, word direct from the "big chief" over his signature carries extra and more appreciated significance. Reviews of accomplishments and praise for good work secure a substantially warmer response when thus presented.

Such bulletins are most valuable in maintaining the interest of employees who may be scattered about in isolated spots. A pumping station engineer or a reservoir patrol guard, for example, may have little regular contact with the people in the office or with service crews. It could be very difficult to bring such a man in for any type of meeting. Yet he, too, is a part of your personnel and should be made to feel that he is remembered.

In offering these various suggestions for ways of keeping employees informed, it is not intended to set up any hard and fast systems. Some of these devices may be too complicated for your use. On the other hand, you may be using procedures which have not been mentioned at all. No two water works operations are exactly alike, and you must always cut your pattern to fit your cloth. These suggestions are offered only to help you work out the particular program best suited to your needs.

Healthy Pride—A Powerful Force

If knowledge is the basis of understanding, pride is the force that puts understanding to work as an active public relations influence. Your people must know what the water works is all about in order to work as a good team, but they will not actually display winning teamwork and team enthusiasm unless their knowledge and experiences create a feeling of pride.

This sensation is born of two distinct but closely interrelated sources—pride in the particular job the individual is doing and pride in the organization of which he is a part. Your task must, therefore, encompass not only the education of your employees but the creation of an atmosphere which will encourage the development of both types of pride.

The educational process, properly handled, provides the basic step in creating employee pride. If the individual really understands the vital significance of dependable water service, if he is made to see how the whole community depends for life itself upon the discharge of the responsibilities assumed by the water system organization, the sense of importance created by this awareness will in itself provide the basis for pride.

But the process must move one step further. The individual must also be given reason to believe that his particular responsibility is, in fact, essen-

tial to the discharge of the system's obligation to the public. It becomes necessary, therefore, to study individual jobs in relation to the system and to seek out the educational clues that will make the jobholders see the value of the work they are doing. The meter reader, for example, must come to realize that proper bills are the basis upon which satisfactory collections rest and that taking in money is essential to system performance. He must regard himself as the water works' principal ambassador to the public—he may, indeed, be the only representative whom customers ever meet—and he must recognize that the reputation of the whole system can depend upon his being a good and informed ambassador.

Each staff member must also be made to feel that the rest of the organization understands his job and its value—that the top executives and section heads recognize his function as essential. One of the battles that must be constantly fought in any organization is the overcoming of snobbery, the elimination of any feeling that the "pitchers" are more important than the "fielders" or that the "backfield" can win the games without the "line."

Tonic Value of Praise

One of the most effective methods of displaying recognition is through the judicious distribution of praise. Rare indeed is the person who does not respond to commendation for able performance, whether displayed through some conspicuous act or through consistent devotion to duty.

You will do well, therefore, to take advantage of all occasions for acknowledging merit, and you should make it a primary obligation of all supervisors to report good work on the part of their subordinates. At the same time you should take care not to overlook consistently high performance, even when it is not marked by any outstanding achievements.

You will find it helpful to maintain a private commendation record, both as a guide for promotions and as a check on any prolonged lapse in bestowing commendation. It would be wise to go over this list every month or so. If you discover that you have had no occasion to comment favorably on the work of a department or a specific individual for a long time, some attention should be given to the situation. Find out what is going on. If work is not up to standard, start looking for the reasons. If, on the other hand, things are going well, make some occasion to comment on that fact. The knowledge that the "boss" is as ready to say "well done" as he is to jump on a mistake can do a lot to make employees feel good about their jobs and take pride in their work.

Particularly valuable is the commendation which reaches the outside community. Release stories of conspicuous performance or consistent devotion to duty to the reporters of your local newspapers. These provide the kind of human-interest material newspapers are always glad to use. This subject is covered in more detail in Part 6 (on newspaper publicity).

You, Too, Are a Source of Pride

In examining the sources of pride, it should be remembered that people are proud to work for a man whose conduct, knowledge, and judgment show him to be fitted for the responsibilities he has assumed. Here are a few leading questions you may wish to ask yourself concerning the qualities that win respect for leadership. Although they do not, by any means, hold the whole secret of executive effectiveness, you may find clues that will lead to further analysis:

1. Are you sure of your technical knowledge? Do you keep up with new developments in the field? Do your subordinates have reason to believe that you know what you are talking about?
2. Does your administrative setup leave you free to plan and give proper supervision to major activities? Do you have enough well trained assistants, and do you permit them to perform to the best of their capabilities?
3. Are you willing to listen? Do you give subordinates a chance to explain views or situations thoroughly?
4. Are your decisions really decisive? Can they be carried out without confusion? Do you make the reasons for your decisions clear? (Subordinates always respond more wholeheartedly when they understand why.)
5. Do you act with promptness, once ample opportunity has been given to secure all the facts?
6. When a responsibility has been assigned, do you give subordinates reasonable freedom of action in working it out?
7. Are you courteous? Do you show ordinary politeness in your relations with employees? Do you remember to say "thank you" at all times, whether the function performed is large or small?
8. Do you make it a point to recognize employees by name, both on the job and off?
9. Do you maintain an open-door policy, giving employees the feeling that they are free to talk with you at all times?
10. Are you impartial? Do you keep a rein on personal feelings and personal dislikes?
11. Do you exercise constant self-discipline, making sure that you are not carried away by your own importance?
12. Are you loyal? Do you stand behind your subordinates and employees in the face of criticism when they are right?
13. Do you avoid criticizing subordinates in the presence of others?
14. Do you show a direct, personal interest in the physical comfort and well-being of your personnel?

Pride in the Plant

Mere physical attractiveness in working surroundings will not instill pride in employees if the human factors have been discouraged. Never-

theless, the good workman respects good tools, and nice-looking offices, spruced-up installations, and well kept equipment evoke a favorable response in the average employee's mind. Order begets order.

Your ability to achieve your goal fully in these matters will depend, of course, upon the actual physical property with which you must work. You may have to make use of old buildings or outmoded equipment simply because funds are not available to replace them. Nevertheless, you can set certain standards of maintenance and order and insist upon their observance. You can take a firm stand on cleanliness. You can see to it that nothing is allowed to continue in a state of disrepair. You can arrange for the proper storage of supplies and parts. You can be generous with paint. You can encourage an interest shown by employees in planting flowerbeds or undertaking other beautification projects. Good housekeeping should be looked upon as a regular function, and proper intervals of working time should be allocated to cleaning up and keeping things in order.

There are many measures you can take to make offices attractive and pleasant. You can dress them up with pictures. You can have a lighting engineer check the illumination and make sure that adequate facilities are provided. You can use pleasing colors on the walls. You can keep windows sparkling clean. You can maintain the same standards of order in offices that you demand everywhere else.

The Best in Equipment

It should always be one of your goals to keep employees provided with the best and most modern equipment that it is possible to procure. This is desirable not only because superior equipment will produce better work but also because of the pride such equipment inspires in the men entrusted with its operation.

A similar but slightly more personal pride is reflected through the provision of equipment for employees' comfort, such as heavy raincoats for wear in stormy weather or a portable coffee-making unit for the repair crew's truck. Such contributions make the worker realize that the management understands the unfavorable conditions under which he must sometimes labor and give him pride in the organization which feels such concern for him.

The purchase of new equipment affords a special opportunity to build employee pride. When a choice is to be made between several competing products or methods, prepurchase testing should be done by the men who will be given the operating responsibility after a selection has been made. The fact that their opinion counts for something with management becomes a source of particular pride.

One caution should, however, be noted. If it is necessary to make a decision contrary to the opinions expressed by employees, care should be taken to explain the exact reasons for the action. If you possess any aware-

ness of human feelings and reactions, you will understand the hurt bound to be caused by your apparent disregard of workers' advice.

Uniforms—Yes or No?

The question of uniforms for employees is a debatable one. Undoubtedly, there is something to be said for facilitating quick identification of workers who have to go into people's homes. On the other hand, unless employees regard their uniforms with respect, you may accomplish more harm than good by forcing the issue. The answer in the long run must rest with your personnel, for their attitude will provide a pretty accurate reflection of the community's attitude. And that should have much to do with your approach to the whole problem.

An important argument in favor of uniforms is that they save wear and tear on the employees' other clothes, but the full force of this point will be affected by other questions. Who pays for the uniforms? Who takes care of cleaning and laundering? How many uniforms must a worker have in order to maintain reasonable standards of cleanliness and neatness? In these matters, practices vary widely in different localities and among different industries. Some organizations buy the uniforms and pay for their cleaning, others furnish the uniforms but leave the cleaning to the employees. Some provide cleaning for uniforms purchased by the employees, and some place the whole responsibility for purchase and care in the employees' hands.

These problems, however, are likely to work themselves out once workers believe that uniforms are desirable. Your first step must be to sound out the group and lead, rather than force, it to a favorable state of mind.

For Warmth—'The Family Spirit'

People who spend almost a third of their daily lives in working association with one another are bound to develop a natural community of interest. Experiences are exchanged, friendships develop, groups form and engage in activities extending beyond working hours. It is this interplay of human relationships which produces the quality within an organization that may be termed "warmth."

This quality may develop quite naturally and spontaneously as people find that they like working together. In a small, compact organization, probably no help will be needed to create a feeling of kinship among all the members. But as organizations grow larger, a helping hand may be required to create this family spirit. The natural community of interest which working associates share is a reservoir of great potential value to your public relations effort. It is well worth a little trouble to direct it and give it purpose.

The House Organ

Properly handled, one of the most effective devices for creating the family spirit and directing it constructively is the employee publication or house organ. Poorly handled, no effort by management can be a worse failure! Employee publications need not be expensive or physically elaborate. A small or medium-size organization can produce a very effective one in the form of a one- or two-page mimeographed bulletin. The success of the publication rests on the editorial point of view it reveals rather than on mere physical attractiveness.

House organs fail, as a rule, for two reasons: they lapse into mere purveyors of personal chit-chat or they are too full of management preachments. The effective publication steers a prudent course between these two pitfalls. It gives plenty of space to personal news, for the old dictum that names make news is as sound as ever. But it also assumes that its readers are interested in their work, in the organization's accomplishments, and in all the various jobs that are making these accomplishments possible. It explains management objectives by interesting stories showing how these objectives are being reached rather than by sermonizing editorials. It preaches virtue by reporting virtuous actions rather than by exhortation.

A typical issue of an effective water works house organ might include the following articles and items: "Reservoir Protection Job Involves Many Strange Experiences"; "Street Crew Sets Record in Replacing Broken Main"; "Customer Commends Meter Reader Jones for Reporting Chimney Fire"; "New Truck Coming for Meter Service Department"; "Manager Smith Tells Rotary Club About Water Works"; "Park System to Turn on Fountains Next Week"; "Office Welcomes Two New Bookkeepers"; "Three New Grandsons Reported by Filter Station Staff"; plus the usual reports of birthdays, sickness, vacation experiences, and the like.

Analyzed, this list of contents shows a feature story on one phase of regular water works responsibilities, two commendation reports, an item on new equipment, a report on activity of the managing executive, a note on an action by another city department which might be of interest to water works employees, a friendly introduction to two newcomers to the organization, and the most interesting among the usual personal items. There is no reason why each issue could not cover an equally varied and interesting range of subjects. But someone must have the time and the curiosity to investigate all the things that are going on in the organization all the time. It takes a full week's work to prepare the right kind of material for a simple four-page publication, and reliance cannot be placed on the efforts of departmental correspondents. They should be used, and their work encouraged, but the editor should be someone with a broad outlook.

A house organ can be a highly effective implement in building employee and public relations, but it will not accomplish its purpose unless time and

thought are given to the editing. If you want a live and forceful employee publication, you must be prepared to give someone the time necessary to do the job right.

Clubs and Organizations

Clubs and organizations can prove a pleasant extension of employees' interests in each other and in the working group. Social clubs, discussion clubs, self-improvement clubs, various types of employee benefit organizations—all can logically grow out of business relationships. The one thing essential to their success, however, is a natural development from the bottom up. They will possess vitality only if people want them to exist. If they are brought into being simply because you think people ought to have them, they will wither and fade away. It must be your role to provide encouragement, make available any facilities you are in a position to contribute, and avoid meddling.

The one exception to this attitude will occur in the case of honorary organizations of oldtimers—twenty-year clubs, quarter-century clubs, and the like. The organization of such associations is really a management responsibility and one which, if your staff includes as many as ten or more eligibles, you should undertake. By the time most men have been associated with an organization for several decades, they have gained some sense of family regard for their concern and their associates. They look not only on the monetary value of the membership but on its significance as a milestone in their lives, and they like the recognition and such symbols of service as may be given them.

Sports Activities

Nearly every organization of any size includes groups interested in some form of sport—bowling, baseball, softball, basketball, horseshoes, handball, and others. You will rarely have to do much manipulating or persuading to arouse interest in forming teams in one or more of these sports. About all that need be said here is that employee enthusiasm for such activities is deserving of your fullest support.

If your budget allows, you will find the modest investment required to outfit and dress up teams definitely worth while. If you do not have that kind of money, encourage the group in any legitimate fund-raising program it wants to undertake. One of the facilities you are likely to possess is land. Be generous in letting the men use it for recreational purposes. Be generous, too, in permitting the occasional use of a piece of equipment—such as a truck or roller—that may be needed to fix up the grounds.

People who play well together work well together. Do not worry too much if, in the heat of a championship series, they seem too absorbed in sport. Their enthusiasm will pay long-run dividends in terms of accomplishments, even if work may suffer momentarily.

Organization 'Get-Togethers'

One important aid to the creation of the family spirit is the general organization "get-together." Whether yours is a privately owned utility or a public system, your budget should carry some provision for at least one annual affair "on the firm" or "on the department" or "on the boss." This can be a Christmas party, an annual picnic, a spring dance, or almost anything you want it to be. You need not limit yourself to one function a year, but one at least there should be.

Everybody likes a party, and the feeling that the organization thinks enough of its personnel to play host and give them a good time creates a glow of good feeling, even among those who are always skeptical of management's intentions. Good food, good music, dancing, and laughter have a way of softening the toughest hides!

Wherever possible, wives, families, and sweethearts should be included in the guest list, and you should spend as much time as possible meeting the womenfolk. Wives' opinions play a big part in most men's feelings about their jobs and their employers, and a few minutes of conversation with Joe's Mary can easily make Joe a more satisfied employee the year round.

Do not worry about the fact that playing host and being a good mixer will affect your standing or your ability to exercise proper executive control after the party is over. Experience has shown that, although people may be pleased to learn that the boss is more human than they had thought, they do not forget that he is still the boss.

Contributions to Comfort and Well-Being

The degree to which management can contribute to employees' well-being and still avoid an annoying paternalism is not always easy to determine. The desirability of providing comfort-assuring equipment for employees who must face particularly unpleasant working conditions has already been mentioned. This seems a natural obligation, and one which casts no aspersions on the worker's ability to care for himself. This last, it would appear, must be the guiding principle to follow.

One employer, for example, found that, when he provided free coffee for his workers, they appreciated it; when he took a step further and provided free hot soup, they resented it. The hot coffee was a pleasant luxury, but the soup carried an inference that they were not getting enough to eat. It connoted charity.

Particularly sound are arrangements by which management meets the worker halfway. For instance, a water system that owns pleasant woodlands as part of its controlled watershed, may grant rent-free leases in suitable locations to employees who want to build summer camps or cottages. While there is a substantial contribution on the part of management, the worker maintains his independence in providing the kind of summer cottage he prefers. He is not handed something and told to like it. Although

this example may not always be applicable, particularly under public ownership, it represents the kind of management-worker relationship which is most productive of results.

Suggestion Systems

Suggestion systems are another factor in the building of knowledge, in the creation of pride, and in the development of the family spirit. Personnel and management executives hold widely divergent views on the worth of suggestion boxes. Some feel them to be definitely worth while, others consider them a source of continuing dissatisfaction. The problem lies in the many unimportant and useless suggestions received and in the low awards often given persons making suggestions who think their ideas worth a great deal more than management does.

Beyond doubt, it is desirable for information and ideas to flow from the bottom to the top. In a perfect organizational setup, this flow would move promptly and smoothly through foremen to department heads and to the top executive. But human factors involved do not always keep this flow moving. Some employees are shy, others feel that the credit may go elsewhere. Department heads may not always recognize a good idea when they see it. Thus, for one reason or another, the flow is retarded.

The suggestion box represents management's attempt to encourage direct communication of ideas by everybody to the top executive level, where they can be weighed in the light of overall knowledge. By the law of averages, only a small percentage of the suggestions received can possess real importance, with perhap a fair proportion proving of minor value. There must be many which are useless, because they are impractical, have already been tried, or reveal a basic ignorance of the problems involved.

To secure value from a suggestion system, it must be looked upon as something more than a mere source of ideas. It must be regarded as a channel of communication—*operating both ways*—between employees and management, and its operation must be conducted with this thought constantly in mind. This imposes a responsibility on management beyond the mere reading through of the suggestions received and the granting of an occasional reward. It calls for a further step, one which takes time and some trouble but which can prove an effective educational and pride-inspiring device: Every suggestion, whether accepted or not, must provide occasion for an interview with the employee making it by someone at or near the top of management. Through such action, the person involved gets the immediate satisfaction of knowing that his suggestion has at least been read. But it goes much further than that. Opportunity is afforded to clear up blank spots in his knowledge, to stimulate his thinking along more constructive lines, to make him feel that his interest is appreciated. Although his suggestion may offer a faulty solution, it may also reveal a

problem which management has not hitherto recognized. Mutual examination may yield a different solution from the one which he has offered but for which he should receive credit. Thus employed, a suggestion system becomes a real builder of employee enthusiasm.

Only a Beginning

So long as man exists, there can be no "last word" on the subject of human relations. No exploration such as this can do more than touch on a few high spots. Its primary purpose has been to consider employee relations as an element in a public relations program. Of necessity, the discussion has been limited to those aspects of the subject which bear most directly on the building of goodwill in the community. The approach has been governed by the fact that AWWA encompasses all types and sizes of communities, from the town of a few thousand to the metropolis of several million. Such suggestions as have been offered are not uniformly applicable, nor are they all-inclusive. Many things can and should be done which have not been mentioned here.

This is only a beginning, an invitation to further thought and action on your part. Whether you are now at the top level of management or on your way there, it is hoped that you will be encouraged to move progressively beyond the scope of this outline rather than to remain within it.

4. Strengthening Ties With Public Officials and Key Citizens

Although your responsibility is to the whole community and the winning of the respect and confidence of the general public must be a matter of constant concern, the daily discharge of your duties entails two relationships which demand and repay special attention. They are rather different in character and will be treated separately, but they have one thing in common: properly developed, both produce a substantial amount of goodwill where it counts most.

First is your relationship with the public officials of the community. Whether the water works is a department of municipal government, a public authority divorced from direct subordination to the municipality, or a privately operated service functioning under franchise, its very nature dictates a thorough involvement in the workings of the community as a political entity. Holders of both elective and appointive public offices are bound to be a force through which you will be influenced and on which you will, in turn, exert influence. It is most important that they understand what you do, have respect for the way you do it, and extend cooperation in the solving of your problems.

Second is the relationship which exists between you and those individuals within the community who have, or should have, more than the ordinary citizen's interest in the water works and its functioning. Their importance rests on the fact that, in them, the educating and interest-arousing process has already been started. They can be persuaded more quickly than others of their stake in the job you are doing, and thus constitute readily available channels for reaching out to the broader public.

The devices you utilize to interest and influence these two groups will frequently be of similar character. But there are important variations, particularly from your point of view, and separate discussions are called for.

Government and Men

In approaching the question of dealing with public officials, it is important to bear in mind that every man who fills a position established by law and whose salary is paid from public funds must guide his course in accordance with precise definitions and restrictions set forth in the legal instrument which created his function. These definitions and restrictions begin with the federal Constitution and extend all the way down to the provisions covering village and township administration. They reflect the basic American concept that government exists by consent of the governed and reveal a constant attitude on the part of our lawmakers that no individual shall ever have too much power.

All legislators are not uniformly wise, and all the codes written for the regulation of public officials are not uniformly sound. Nor do all public officeholders show a uniformly precise respect for the restraints imposed upon their actions. But, as a rule, it will be found that, throughout the structure of government, men at all levels of the public service are keenly aware of "the book." Regardless of their desires or intentions, they generally seek to attain their ends within the pattern laid down by written rules and regulations.

This places an undue emphasis on procedure, and one which at times may prove very irksome. What you do frequently seems much less important than how you do it. But this is one of the conditions under which you must learn to work, and you will be wise to develop for yourself the best possible ways of operating within the system.

Knowing Where You Stand

Start, then, by studying the municipal charter or other instrument under which the community functions. Study the laws which set up the water works, the ordinances and codes of regulations governing its operation, the lines of authority through which the people exercise their ultimate control. If you operate a private system under a franchise, be sure that

you know its terms, as well as such laws as may have a bearing on the franchise relationship with the community.

Know which public officials possess legally designated responsibilities in connection with your operation. Know what those responsibilities are, and how they are supposed to be discharged. Know the procedures by which measures are cleared through your local lawmaking body, what the committee breakdown is, just how each committee may have a voice in judging or controlling your work. Know to what degree state laws affect the situation and to what extent state administrative agencies can interfere. Know, too, about any overlapping of authority of different types of local government—county, township, village, or special district.

In dealing with public officials, you are dealing with human beings possessing all the attributes of and capable of the same intellectual and emotional responses as any other persons. The officials' freedom of action and expression is colored, however, consciously and unconsciously, by their constant awareness of the public accountability which characterizes the jobs they hold. Obviously, the surer you are of your position under the law—the more carefully you channel requests, recommendations, and opinions through the precise procedures established for the purpose—the easier you make it for public officials to work with and for you.

The Long View of Politics

Every responsible public official holds his office, directly or indirectly, through political action. Under the American concept, that action results in a majority with responsibility and a minority with the right and duty of criticism. Neither of these elements is fixed. They grow and diminish constantly, and from time to time they change places. The maneuvering of these elements constitutes politics, and a politician, in the unprejudiced sense of the word, is an individual who works at that particular job. He may be guided by base motives or noble ones, but his function is essential in a democracy.

To succeed in an elective office, a man must have an alert appreciation of the interplay of political forces. He must be concerned with the minority as well as the majority. He must know when to retreat as well as when to advance. One of the chief reasons so few businessmen show up well in public office lies in their failure to realize that the political way of doing things is inherent in the job. In nearly every instance in which a "good-government" leader has succeeded, it has been because, along with his high ideals, he possessed a very keenly developed sense of practical politics.

You do not have to be a politician to be a successful water works executive, either within or without the framework of municipal administration. But it is essential that you understand the basic considerations which guide the public officials of your community, particularly those who hold their position by direct public mandate. By bearing in mind their way of think-

ing, you will be better prepared to secure their cooperation, better prepared to accept reactions somewhat at variance with those you might otherwise anticipate.

The Neighborhood Factor

In dealing with public officials, regardless of their position, it is well to remember that most men who climb the political ladder have come up from neighborhood leadership. This will, of course, not be so pronounced in the small and compact community, but, as soon as a town is big enough to have a "north side" and a "south side" or any other internal segmentation, its political development will reflect that fact.

Many local legislative bodies are still based on the ward or district system, but even where they are not, an effort is always made by political leaders to secure candidates who will assure representation to different parts of the community. Candidates for general municipal offices are also selected with this thought in mind, and it may be stated that, as a rule, men elected to public office in any community continue to have special ties with friends and neighbors in various parts of town.

Each of these elected individuals, therefore, is likely to be particularly influenced by what people in some one neighborhood are saying and thinking. Thus, it is only common sense for you to take that factor into consideration in dealing with public officials. Make it your business to know which section of the community is dearest to the heart of each official with whom you have a relationship, and be prepared to talk to him and judge his reactions in the light of that fact.

Although your goal should be the impartial rendering of the highest quality of service to the whole community, practical considerations frequently dictate a step-by-step handling of details. Your normal working pattern will call for an improvement in one section this year, a new installation in another later on. Here is where appreciation of the neighborhood cast in a public official's mind becomes important. Do not, for example, try to sell a mayor who comes from the west side on a big east side improvement unless you are pretty sure that his old friends are getting good service, or unless you can demonstrate a need sufficiently great to demand action, regardless of possible dissatisfaction elsewhere.

Information—Your Basic Tool

Reduced to its simplest terms, the job of winning support from the public officials of your community consists in giving them a picture of your operation so comprehensive and so understandable that they will possess a positive appreciation of the importance of the water works to the people as a whole. After all, it is the people who in the long run call the turn, and it is concern with public reaction that lies constantly in the back of every public official's mind.

The bogeyman in every officeholder's dreams is the "Didn't you know . . .?" of some irate citizen or representative group—the challenge which implies ignorance or indifference about some matter of public concern. Men in public life expect to face opposition from time to time, and they are prepared for it. But when they appear uninformed on matters which the public thinks they should know about, they are in a tough spot. That is usually when the search for a scapegoat waxes hot and furious.

One of the most important things every professional called into a governmental administration must learn is that, regardless of how technical the nature of his work may be, it is part of the public's business, and the public, through its representatives, has the right, and may at any moment undertake, to probe his job from beginning to end. Unfortunately, this fact is not always appreciated by bureau and department heads. They may think their work too important to justify questioning, too productive to make explanation necessary, or too complicated to expose to the layman's intelligence. None of these beliefs is ever true.

The more important, productive, or complicated the operation, the more essential it is that the people's representatives understand its significance. The more vital the issue, the greater the public official's anguish over an admission of ignorance concerning it.

At the community level, the water works is one of the essential establishments operated by professionals. Most people—in and out of office—do not know exactly how it functions. Unless he has been told, a city councilman, for example, could hold down his job for years without knowing the processes of keeping water safe. It is much wiser to warn him in advance that increased chlorination is needed than to wait for his aggressive questioning after some constituent complains about "funny taste."

The more general the interest of the public official, the more likely he is to distrust the professional. The surest way to win his interest and support is to make him feel that, so far as you are concerned, you want him to know everything he can about your specialty.

Forget About Taking Credit

Everyone, quite naturally, likes to feel that he is receiving credit for the work he does. But, interestingly enough, one of the best ways of gaining such recognition is through the generous awarding of credit to the other fellow. In the long run, credit generally settles where it belongs. Much that you, as a professional, are able to do is made possible because of the cooperation of nonprofessional elected or appointed officials. This cooperation may consist only of noninterference in the discharge of your duties, or it may extend to active and interested guidance and support.

In looking over your accomplishments, then, always consider these contributions, whether active or passive, to the success you chalk up. In reviewing what has been done, both publicly and privately, be generous in

acknowledging your debt as a professional to the people's representatives with whom you have worked.

Most men who take a public post want to make a good record. If, as will usually prove true, the officeholder is trying to do his best, the more liberally you identify him with what you have been able to do, the warmer and more effective will be his cooperation. There are exceptions; in such instances only one course is open—a quick and definite showdown.

Keeping Officials Informed and Interested

Your first step in establishing a definite program covering relations with public officials might well be to compile a list of the various governmental functions in your community and the particular individuals handling them. To be of utmost value, your list should carry notations covering all pertinent facts—precise relation of each function to your job, and background and personality of individual involved, together with his party affiliation, neighborhood loyalty, organization memberships, attitude on water works matters, and so forth.

Your list may run to just a few names, or it may include several hundred. The communities of the United States are so varied in size and operate through such a variety of governmental setups that it would be quite impractical to outline an exact list keyed to the requirements of any individual water works executive. Generally speaking, however, there are at least six types of public official who can have some influence on your position. It may not follow that they do, but it would be wise to check and make sure. They are:

1. Local community executives responsible for the overall administration of community functions—mayors, chairmen of town boards, city managers
2. Local legislators—councilmen, aldermen, town board members
3. Policy-making nonprofessionals elected or appointed to represent the public or the local administration in the operation of specialized functions (water works executives are frequently responsible to either an individual or a group in this category)
4. Members of special boards or commissions charged with directing some public service within the community, yet divorced from the official corporate setup (the water works, itself, may have such status)
5. Departmental administrations directing other public services—fire, sanitation, health, welfare, police, building inspection (these will include both the professionals occupying posts at the same level as your own and such commissioners, board members, and directors as may exercise policy-making authority)
6. Officials of other governmental agencies—state, county, township, special district, and even federal government (the relation between the local

organized community and other spheres of government varies widely from state to state).

It can only be suggested that you examine your particular setup with great care and be sure that, if officials in any of these categories can help or hinder your work, they are included in your list. (How much do county officials, for example, have to say about property you own outside the corporate limits?)

To reach officials important to you may not be much of a job. You may be fortunate enough to be able to keep all of them properly informed in the course of routine contacts. But are you doing it, and doing it for all the right people? Equally important, are you informing officials in proper sequence? Consider this from two angles—the exact chain of legal responsibility that has been established and the personalities of the individuals involved. If you are responsible to a commissioner, it is pretty obvious that you should tell him about a situation before reporting it to a city councilman—and so throughout the structure of officialdom. On the other hand, you may face a situation in which official status is not involved but where common sense points to the desirability of letting a certain person in on the "ground floor."

The superintendent of one village water works constantly faced opposition from a member of his board until, by accident, he discovered the solution. He found that if he informed that member, in advance, of the nature of the proposals to be presented and let him carry the ball, all went smoothly.

Talking things over will always be an important part of your relations with public officials, and the stronger the network of pleasant personal relationships, the more effective will be the support given you. Too great reliance should not, however, be placed upon conversational exchanges. First, even in a small community, you may not be reaching all the officials who should hear about the water works and what it means to the people. Second, you will rarely say the same thing in exactly the same way to any two people, and, even if you did, neither of them would interpret the conversational give-and-take in exactly the same way. Consideration should, therefore, be given to some of the more organized methods for getting information across.

The Annual Report

The one established informative device available to practically every water works executive is the annual report, and this applies whether the system is publicly or privately owned. Throughout business and government, increasing attention has been given in recent years to the job of making reports more interesting, more informative, more effective in selling the business or agency involved to the public. Many water departments and companies have already taken steps—frequently with impressive results—to give life, color, and public relations value to their reports. You may

have already taken some or all of the measures suggested below, but the importance to all water systems of improved reports is such that the matter is worth exploring in some detail.

The influence of the annual report need not be confined strictly to official circles. It should be released to the press and to as many representative citizens as possible. But its official status marks it as a presentation made primarily for the benefit of those who are supposed to know most about the water works, and you should do all within your power to make sure that it gives a clear, complete, and interesting picture.

Your resources may not permit an elaborate job. You may have no money for illustrations or printing, but there are several elements you can employ, even in a simple set of multigraphed sheets. First, make the report readable. Along with the essential statistics, take the time to prepare an interpretive discussion, pointing out what the figures mean in terms of service to people, illuminating your account by case histories and examples, explaining all technical developments in words anyone can understand, reviewing carefully the evidence on which you base any conclusions or recommendations. Stress the relationship of the water works to other aspects of the community's life, to industrial and commercial development, to health and fire protection, to planning and zoning provisions. In short, make the annual report a vehicle to convey your understanding of your own job in its broader aspects.

Second, present an overall account of the water works and its functioning. This may change only in minor detail from year to year, and, for that reason, you may wish to add it as an appendix rather than as an element in the main discussion. But it should appear in every annual report. There will always be some new readers to whom you will want to give the whole story. And it is more convenient to have the material immediately available than to dig it out of some prior report or other document when needed.

Third, take space to give credit and commendation, not only to those officials who have helped make your achievements possible, but also to your assistants and subordinates. Describe any outstanding jobs accomplished by individuals or crews. Note records of long employment attained during the year as well as retirement of old and faithful employees. These items build up the feeling that your organization is a team and relieve the report of overemphasis on your own activities. Moreover, such mentions get talked about, remind public officials that the water works organization is composed of people (with votes and an influence on public opinion), and build goodwill both within and without the utility.

Use of Pictures

Although much can be done to make even a typewritten document interesting, the effectiveness of the report will be greatly enhanced if you can

make provision for printing and pictures. There are several processes which are not prohibitive in cost—notably, various photo-offset techniques —but, if you can possibly pay for a good-looking printing job, the investment is most desirable in terms of impact on the reader.

If possible, use an attractive and pertinent picture on the cover. Reservoir and watershed areas can provide handsome scenic photos, while shots of men at work can give you something more dynamic. One of the best ways to get the most out of a photographic cover is to use what printers call a "bleed" plate—where the illustration fills the entire surface of the paper. Photomontages (a number of pictures blended together) are sometimes effective but must be very carefully done. Moreover, they have been employed so much in recent years that they no longer cause the comment they used to arouse. Color dresses up the cover, of course, but you can get some very effective results in simple black and white, particularly with the bleed cover technique.

Use pictures inside, if you can. Almost any picture pertaining to your operation can be a source of interest, but you should strive for variety, including coverage of different installations and operations rather than several views of the same subject. It is always best to secure professional photographs. One way of doing this inexpensively is to make a deal with one of the newspaper photographers of the community. He gets pictures for his files; you get copies at a modest print charge. If you are fortunate enough to have a really good amateur photographer in your organization, he would probably tackle the job with enthusiam, but make sure that he is good and has proper equipment. Nothing looks worse than obvious snapshots in a publication of this character.

Maps and charts are most helpful. If you can provide even one map showing the overall relation of the water system to the community, your report will be much more informative. The map should show the source of supply, pumping stations, treatment plants, storage reservoirs, and major systems of mains. It will be especially useful if new installations or replacements discussed in the report can be indicated, as well as proposed extensions and improvements.

Charts can be used in many ways: to dramatize statistics, to show departmental organization, to show the relation of water works to other divisions of city government, to indicate trends in demand, to explain the technical workings of the water system, and so forth. Charts do much to add color to otherwise dry pages, and help many readers get a better understanding of the information provided.

Keeping Information Flowing

The annual report gives you an important opportunity to present the water works picture in its entirety, but it has one drawback—it comes out only once a year. Plenty can happen in the 12 months that elapse between

annual reports, and information of the utmost importance in June may mean little to anyone—except, perhaps, as a matter of record—6 months later.

If you want the interest and support of well informed public officials all the year through, you will find it helpful to make use of a regular monthly, or at least quarterly, newsletter, bulletin, or report. This need not be elaborate or expensive—just a page or two of typed or mimeographed material. It would be a good investment to have a special and distinctive letterhead or bulletin sheet for the purpose.

The point of view taken in such a newsletter would vary somewhat from that governing the preparation of the annual report, for the greatest value of the former rests on the amount of information it provides in advance of the fact. Although it is proper for an annual report to look ahead and discuss future plans, its primary purpose is to recount what has been accomplished. Moreover, because it remains current for a whole year, predictions, recommendations, and announcements of plans must be couched in pretty general terms. The purpose of regular bulletins is to keep public officials advised on present and immediately pending developments, to give every public official pertinent water works information at the time when it is most advantageous for him to receive it.

Some Appropriate Items to Cover

Typical of the subject matter that it is logical to cover in a newsletter would be:

1. Definite announcements of new undertakings—repairs, replacements, new installations—listing exact locations of work, working schedules, possible disruptions or inconveniences involved, reasons for doing work at time scheduled, benefits resulting

2. Warnings of conditions likely to disturb the public—impending droughts, floods, shortages of supplies, presence of taste-producing organisms—together with precautions taken by the water works and possible effect on service and attitude of the public

3. New equipment acquired or due to arrive—why it was purchased, what it will do, economies and benefits expected to result from its use

4. Any changes in regulations, business procedures, or operating methods—explaining why made, benefits expected to result, and effect upon public opinion

5. Announcements of completion of special jobs previously scheduled, followed by continuing reports of effectiveness of changes made

6. Report on current business—water consumption, collections, new services installed

7. Report on current public relations activities—talks made or scheduled for immediate future, special press releases, guided tours of plant, work with school children (care should be taken, however, to avoid blowing your own horn)

8. Interesting items concerning personnel—reports on individuals receiving special commendation, notice of impending anniversaries or retirement of old employees, or other matters which mayor, board, or other officials should not let pass unobserved.

Other items may well come to mind, but the outline above should provide clues to the type of material appropriate. It may be argued that much of this information will be passed on in other ways, but the value of a regular newsletter sent to a complete official mailing list is that it forestalls accidental failure to let someone know something that might be important to him.

For example, you may have told the mayor that Ed Davis is celebrating his silver jubilee as a water works man, and you may have suggested that a congratulatory letter is in order. But it may never have entered your mind to pass the same word on to the councilman representing Ed's home neighborhood, and it might be that he, too, would like to send congratulations. By including the item in your newsletter, you make it possible for every official who might have some interest in Ed to note the occasion.

Or suppose you have to tear up a street. Certainly you have notified the street department, the fire chief, and the police, but have you remembered that the city treasurer lives in the immediate neighborhood? Chances are that, if residents in that part of town are inconvenienced by your operation, he will be the one most likely to get complaints. But if he knows, in advance, what you are doing and why you have to do it, he will be much better prepared to pacify the neighbors than if it is news to him.

A regular information service to the community's officials is a sort of insurance against "blind spots," either in your own thinking or in that of others. That is why a comprehensive mailing list is so important.

One word of warning, however, is in order. Suggestions covering unsatisfied needs may occasionally be justified, but care should be taken to avoid creating a feeling that you provide information only to back up requests for money or other special benefits. If your bulletins are too full of "We want—" or "We need—" or "We should have—" they will defeat their purpose.

The outstanding mistake made by so many organizations and institutions in all fields of endeavor is that they start telling their story only when their hand is outstretched for special favors. When they do not need anything, they bury themselves in their own affairs and let the world go by.

By taking the attitude that you are providing information as a matter of public interest, by keeping the facts flowing when you have no special case to plead, you will build a strong foundation for the day when you do need to win support for some special cause or program. The fact that those you seek to influence are accustomed to hearing from you when you do not want anything will make them all the more willing to listen on those occasions when you do.

The Special 'Flash'

From time to time, especially if your newsletter goes out less frequently than once a month, you may have some item of information which should be transmitted immediately. For this purpose, you might keep a supply of special letterheads or memo sheets, imprinted with a big, bold "Important," possibly in red ink. Naturally, the use of such special "flashes" should be restricted to items of immediate and important significance, and good judgment should be exercised in determining just what is important enough to merit such treatment. If every little item of interest is heralded in such a way, your special notices will soon lose their effectiveness. Properly employed however, flash news announcements create a strong impression of your genuine desire to keep all officials promptly informed on every matter of concern to the community.

In this connection, you may feel that it would be preferable to issue all information in the form of special announcements rather than through periodic bulletins. There are several reasons why such a method appears undesirable. In the first place, it is likely to produce too many separate notices, covering subjects of too wide a variation in importance. In the second place, you are less likely to do a thorough job than if you know that the first of every month you have to prepare a suitable newsletter. Faced with that task, you will form the habit of building a file of appropriate items and checking over all that is going on to make sure that you have included everything that should be covered.

Personal Inspection—A Basic Step

The discussion of personnel relations (Part 3) stressed the paramount importance of actual inspections of plants and facilities by all employees. It is just as important that this basic step be taken with the public officials of your community. In the smaller community, you will probably find it possible to include the complete roster of public officials in one inspection party. If your community is larger, this may not be practical, and you may have to arrange several such trips. Also, as the water works itself becomes more widespread physically, you may have to consider extending inspection activities over several days. If this is required, an effort should be made to schedule the entire set of tours within a relatively short period, so that the picture is seen as a whole.

It would be well to make the water works inspection a regularly scheduled annual event, and, if you are in a position to cap the occasion with some social activity, the added inducement would be well worth the trouble. In arranging inspection parties, check the whole list of public officials who can have any effect on the conduct of your job and the community's reaction to the work you are doing, and seek to include as complete a representation of all groups as can be obtained.

The logical order of plant inspection would be that dictated by the actual flow of the water itself—starting with sources, working through the pumping, treatment, and storage stages, to the business office. Or it might be interesting to reverse the sequence. This order would take the party to the watershed—and perhaps to a pleasant picnic supper—at the end of the trip.

If possible, some briefing should be done in advance, a short discussion before the party starts out or at the first stop on the way. Make sure that there are always enough water works executives included to provide informed guidance to every visitor. For those portions of the inspection which involve motor trips, an individual guide of executive standing should be provided for each car. For inspections on foot—through pumping stations, filter plants, and laboratories—there should be a guide for each six or eight people. This does not mean that the inspection should take on the aspect of a Cook's tour, with lecturers haranguing each little group, but only that a sufficient number of informed executives should be available to make essential explanations and answer questions within each natural cluster of visitors. These, remember, are your special guests—guests enjoying a right to ask questions and receive all available information—and you will do well to make an equally special effort to satisfy their interest.

Cooperation With Other Community Services

As already noted, the public officials with whom you deal fall into several general categories, among which one group, in particular, meets you pretty much on your own level. That is the administrators of the various public services rendered by the community's government—the fire, health, police, sanitation, and park departments, the department of streets and highways, the department of building inspection, and possibly others. Your relations with some of these, such as the fire department, are established by law or contract. With others, you may not have so rigidly fixed a relationship, but, in one way or another, their activities affect or are affected by yours. Obviously, the better the men charged with directing these specific spheres of governmental responsibility understand your job and its responsibilities, the more helpful they can be to you. And the more thoroughly you understand their jobs and their problems, the more helpful you can be to them. The building up of a cooperative attitude on both sides should, therefore, be an important objective.

Obviously, the various departmental administrators belong on the list of persons to whom you send all information; they would, naturally, be included among the guests invited on your inspection trips. But the opportunities for more specialized contact are particularly valuable ones and should be pursued directly.

The emphasis in these relationships shifts somewhat—you must be willing to learn as well as eager to teach. Everybody feels that his job is of

paramount importance. You win friends among your fellow administrators by the interest you show in what they are doing, in their problems, their responsibilities, and their achievements. Take time and thought to analyze their spheres of activity in relation to yours. Look for ways and means by which your organization can better fit its operations into the operating patterns of the organizations which they supervise. Welcome their suggestions; explore the reasons for those suggestions; accept help in working out methods of adopting them; or, if the suggestions cannot be followed, clearly explain why not.

Consult with the responsible executives before scheduling work which may disrupt the normal functioning of other public services; try, so far as possible, to adjust your plans to theirs and be ready to meet them halfway when complete adjustment on your part is not practical. If, on the other hand, undertakings on their part affect your normal operation, be as cooperative as possible in making arrangements that will facilitate the progress of the work to be done.

Be willing, too, to join forces with department administrators in any general programs for the good of the community as a whole, even though the water works may not have too much to gain or the gains that accrue may prove more beneficial to others than to yourself. The shoe may be on the other foot some day.

Exchanging Education

With a cooperative spirit developed at the executive level, further benefits will be generated by an exchange of educational activities reaching down into the various organizations involved. The best way to secure such an exchange is by asking the other fellow to teach your personnel before offering to teach his. Set up a program whereby the various departmental administrators are invited to tell the story of their work to your executive staff or selected personnel groups. Give your program emphasis by arranging for your employees to attend fire department demonstrations, visit the city health laboratories, inspect park department greenhouses, observe the city engineer's methods for testing paving materials. In short, take a kind of positive action that will reveal a desire to extend the spirit of cooperation throughout your organization.

Once you have opened the door through such a program, the flow of information in the opposite direction will not be long in following. Be ready to do a good job. Develop a talk which not only gives a picture of the water works and what it does but also demonstrates just how the water works operation is related to the work of the group you are addressing. Arrange for representative groups from the various services to be taken on inspection tours, making sure that each tour is slanted to devote major emphasis to the specialized interests of the visitors.

Your overall goal is to fit the water works into the general pattern of community service, and it may be said that this goal is equally important whether the water works is a division of government or a privately owned company. The more completely you secure such identification throughout the community's political structure, the greater will be the understanding of your work and the firmer the support it will receive.

Closer Relations With Key Citizens of the Community

Almost any citizen of a community may prove to be a key citizen in the eyes of somebody. Your first job must be to determine who in your locality possess that relationship to the water works. As you examine the situation, you will probably find that the people of key importance to you comprise a rather diverse list, embracing a number of trades and professions. Many of them are not in the positions of prominence that the word "key" might indicate to the editor of your local newspaper.

Actually, the person most important to you in the long run is the average citizen. But, because he is "average," he is also nonexistent. The importance of your particular group of key citizens rests in the bridges they provide between you and the many kinds of men whose varied ideas and interests contribute to the makeup of the average man in your community.

A key citizen, from your point of view, is any individual who possesses a special personal, professional, or business interest in dependable water service, or whose business or professional activities affect the service you render. He can be almost anybody whose relations with the water works rise above the general level of the average customer's interest. Some of those who may belong in this category are:

1. Large-scale water consumers—heads and technical executives of industries, business firms, and institutions to whom water is an actual "tool of the trade." To them, dependability of supply, character of flow, mineral content, service cost, and other factors are of natural and continuing interest.

2. Chamber of commerce officials, civic association leaders, and others actively engaged in directing efforts to secure industrial and other growth for the community. To them, a plentiful, safe, and economically usable water supply may mean the difference between success and failure in bringing a new business to the area.

3. Dealers in water appliances, bathroom and kitchen equipment, plumbing supplies, and the like. Depending for the commercial success of their enterprises on water-using equipment, they should have considerable interest in the character of the local water supply.

4. Plumbers, the actual installers and repairers of water-using equipment—a logical group in which to instill a better understanding of the water system and its operation.

5. Real estate operators and developers. The availability of water is essential to the success of their developments.

6. Architects, engineers, building contractors—all having to do with the planning and construction of buildings. The proper placing of water facilities is one of the important responsibilities of their work; the more they know about the water supply and its characteristics, the better job they can do, and the better satisfied will be the customers who eventually occupy the premises.

7. Fire insurance agents. The water system and its efficiency play an important role in determining rates; interest in water works is fundamental to their business.

8. Physicians, to whom the safety of the water supply is a matter of particular concern.

9. That miscellaneous group of individuals, from all walks of life, who have taken the trouble to show some special interest in the water works.

10. Ministers of local churches, who frequently take an active stand on civic matters (as a matter of fact, the processes of making water clean and safe offer an analogy for a sermon).

The degree and character of the interest displayed in each group will vary widely. It becomes one of your public relations obligations to develop each realm of interest to the point where it will prove an active force in creating broader public understanding and appreciation of the water works job which you and your organization are doing.

Importance of Direct Contact

One definition of a key citizen has already been given but another might be that he is a person whose value to you merits the time and trouble involved in calling upon him at his own office or place of business. He may rate such attention because of the volume of business concentrated under his direction or because of the key he holds to the attitudes and opinions of others. Whatever the reason, he is worth knowing on a man-to-man basis.

One of the advantages that accompany small-community operation is the opportunity to maintain personal association with all who possess such value. As the community gets larger, this becomes increasingly difficult, and, somewhere along the line, it becomes necessary to set up the contact job as an organizational function. Here is one condition which calls for the delegation of the public relations responsibility. Depending on the size of your community and the number of key people involved, it would be desirable to appoint one or several assistants having as their principal duty the job of going out and calling upon the various individuals important to you. In larger cities, these assistants might cover specific groups—one man keeping in touch with large users and the chamber of commerce, another vistiting equipment dealers and plumbers, a third handling real estate and insurance interests, and a fourth concentrating on physicians.

These contact assistants should be carefully instructed, not only in the physical operation of the water works, but also in the interests of the groups assigned to them. They should have a sound knowledge of the relation of the water system to the community as a whole and should be kept sufficiently informed of plans, objectives, and points of view to be able to speak with confidence and authority on behalf of the water works. Moreover, their contact with you should be so close that you are constantly in possession of the information, suggestions, complaints, and impressions gathered in the course of each day's visits. They should always be able to reach you easily and should feel free to bring you into any situation beyond their capacity to handle.

Regardless of how able such assistants might be, you should never forget the fact that they are substituting in a job which is really your major concern. From time to time it would be well to accompany them on a call, even though no critical question is at stake. It might also be advisable to arrange occasional small, informal meetings of persons who have already been visited individually, in order to talk things over with them yourself.

Arousing Interest

Whether you handle these direct contacts yourself or delegate them to special assistants, the approach, to be successful, should possess one essential characteristic. It should be worked out in terms of the interests of the person called upon. Everybody is most concerned with his own affairs, and a busy man is not going to be too excited over the mere fact that Mr. Smith of the water works wants to see him, particularly if he believes he is already pretty well informed about the water works anyway.

Think through the relationship which every key person has to the water supply and the water system. Then examine your own side of the picture to see just what it is you have to offer that would be particularly helpful to him. Approach the large commercial user, for example, with information about water waste control—perhaps the AWWA JOURNAL has just printed an article describing a new technique, or maybe you have been conducting some experiments and learned something new yourself. Offer to conduct a demonstration right in the man's own plant—make him glad you dropped in. He will listen then, if you take a few minutes to talk about the water works in more general terms.

Or try something like this on the plumber—assuming, of course, that the facts warrant it: Drop in with a hint that your meter readers are noticing a lot of amateurishly patched up plumbing fixtures as they make their rounds. Analyze with him the prospects of handling repairs. Once a conversation is under way, you will find ample opportunity to pass on a few facts about the water works and how its operation is affecting him.

These are simple examples only. Your own approach must be developed from careful study of your community. You should maintain a con-

stant and painstaking lookout for the kind of information that will give you effective leads in arousing interest. Think always of what the other fellow might want most to know about and use that as the wedge into his mind.

Letters and Bulletins

The importance of certain organizations and individuals to you is such that they deserve special attention by mail as well as by direct contact. In fact, the two devices should be employed in close conjunction. For one thing, it is always good public relations to send a "thank you" letter to anyone who has given you time for the presentation of your story. Where contact assistants must be employed, one simple way of showing that they reflect your interest is to send a brief letter stating that the interview has been reported to you and that you, personally, appreciate the courtesy extended. If some special point or request for information has come up in the discussion, reference can be made to that, and, if a really important issue has emerged, it would be well to state that you will telephone shortly for an appointment.

It would be desirable to develop a "special-interest" mailing list, similar to your public officials list, including all persons who should hear, from time to time, about what the water works is doing. Those on such a list might receive the same newsletter or bulletin you prepare for public officials, although there may be many policy reasons why this would not be desirable. It would, perhaps, be better to use this list only for letters or announcements directly affecting particular groups, together with an occasional informal report on the general picture. This would, in addition, be an appropriate list to receive the annual report.

Inspections and Demonstrations

The inspection tour is just as basically important in dealing with these key groups as it is with your own personnel, public officials, or the public generally. It would, of course, be best to arrange tours so that those having the same general range of interest were in the same party. Thus, explanations could be slanted more directly to their experience and understanding. Certain conditions might also make it advisable to conduct the tour for the benefit of just one individual or a small group from one company. Again, only a part of your operation might prove of particular concern to certain visitors. These are matters which you will decide in the light of the circumstances.

Added value from inspections can be secured by the maintenance of a guest register at the principal point of interest most likely to be visited by all inspection parties. Not only officially guided visitors but also those interested persons who happen to drop in on their own should be requested to sign. From such a register, lists can be developed which may prove of

subsequent value. If a register is maintained, however, it should be kept on an attractive desk or table, and a good pen should be provided!

Associated with the inspection tour as an educational device is the demonstration. Mention has already been made of suggesting a demonstration of waste control right in the plant of a large commercial user. Similar in-the-plant demonstrations might be provided covering elimination of industrial pollution, corrosion control, handling of emergencies or repairs, and the like. Such contributions are valuable because they help employees of large water-using concerns to understand their work better and learn to do a more efficient job. At the same time they bring to the management of the firm a better understanding and appreciation of the water works and its executives.

Appropriate demonstrations could be worked out for the benefit of others on your "special-interest" list. Doctors, for example, might show interest in a demonstration of water safety tests and controls. Insurance men would undoubtedly be impressed by a joint demonstration of the water and fire departments. You might consider establishing a program of "water clinics" for the special benefit of plumbers, architects, and builders. And still other ideas will doubtless come to mind. Such activities involve time and trouble, but if they make an effective impression on people important to you, they will achieve their purpose and repay the effort.

5. Telling the Water Works Story in the Schools

No single public relations endeavor in which you can engage will produce more far-reaching or enduring results than those achieved through a consistent and well organized educational program directed at the younger generation, in both the grade and high school groups. The logic of this statement is obvious. First, impressions made on young minds are lasting to a degree rarely found among older people. Second, the school organization offers a particularly convenient channel through which such impressions can be implanted. Third, the children, assembled in groups which can be reached, provide a bridge to the fathers and mothers with whom it is not always easy to establish contact. Fourth, a continuing education of the community's youth assures a constant interest and understanding through the years ahead.

These, fortunately, are facts widely recognized among water works men, and they have probably accomplished more in this field than in any other sphere of public relations activity. This part of the study, therefore, will doubtless contain a larger amount of familiar material than the rest. Nevertheless, at the risk of repeating much that is already known, it has

been considered desirable to review the principal procedures and devices through which successful school programs are established and maintained. In addition, a section dealing with water works movies is included.

Planning and Developing the School Program

Although cooperation between water works managements and the schools is widespread, much of it is based on a casual, hit-or-miss relationship which prevents full attainment of the goal a real educational program should have. The issuance of a general invitation to visit the water works is, of course, a good idea, but it does not constitute an educational program. The provision of speakers and material asked for by students and teachers is equally desirable, but, again, such helpfulness, important as it is, does not meet the definition of a program.

If it is worth while to "catch 'em young"—and agreement on this score is general—it is equally worth while to set up a definite system of procedure which will bring the water works story to the young people of the community year in and year out, as each annual crop reaches the proper school or age levels. This means that you must offer the schools an educational program suited to their needs and must secure from the school administration a commitment to employ it. It means that you must determine the stages in the child's school life at which your story will have the greatest influence. It means that you must prepare material which will dovetail with the school system's methods and that you must set up schedules of activity timed in relation to the study patterns followed. It means that you must work out your plan, from the beginning, in close cooperation with representatives of your local school establishment.

It is a basic function of the school to train good citizens, and there is no question that the good citizen should know about his water supply. Almost without exception, school administrators will acknowledge this to be true. Quite a gap, however, can exist between agreement with a general idea and acceptance of specific recommendations for putting it to work.

Fitting any extra activity into the school schedule calls, not only for the approval of the administrative authorities, but also for the interested support of supervisors, principals, and teachers. Make sure, then, that all concerned are convinced of the pertinence and interest of the educational contributions you seek to introduce. Get off on the right foot. Before laying out your program, consult with your local educators. Find out what they are doing, what they want, what they must have, what they cannot undertake. Know their working schedules, learn where in the various curricula your story most logically fits, get their advice on methods of presentation.

School programs vary widely in the communities of the United States. Some follow the two-part plan, with children remaining in elementary school

through the eighth grade and proceeding to the four-year high school course. Others make use of the junior high school setup, with breaks between the sixth and seventh and ninth and tenth years. And still other variations will be found. While a general distinction is made between grade and high school activities, the exact spotting of your particular efforts will depend upon the structure of your local school system. Be guided by the conditions that prevail in your locality.

Once your program has been worked out and accepted by the school authorities, make sure that it is thoroughly understood by all those whose cooperation is required. Present it before the school board, if possible. Review it with individual principals and teachers. If yours is a large school system, seek to explain it at teachers' meetings. Do all within your power to make sure that your purposes are understood and your methods wholeheartedly accepted.

Factors Affecting the School Program

Your school program can be as simple or as highly developed as your resources and community conditions dictate—ranging from a single annual lecture for all upper grade school children to complete courses of high school study. But, in general, it may be suggested that it is better to reach more children with simple, sound, basic material than to work out a very elaborate program which, by its nature, can only be presented to limited numbers.

The soundest approach is probably one that rests on a broad and comparatively simple base and then, as conditions permit, moves to more complex undertakings. Following this line of thought, consideration will be given to: [1] a basic program, addressed either to the upper grade school groups or to the general high school audience; and [2] a specialized high school program, breaking up the general story to provide applications of special interest to students in various courses.

Perhaps the most important decision you will have to make concerns selection of the group to receive basic attention—whether to concentrate on grade school, junior high, or high school students. This is a matter on which you will seek the advice of your local school heads, but a brief analysis of some of the considerations involved may be in order. To a large degree, your decision will depend upon the size of the community and the number of people you have available for educational work. If you can effectively reach all the grade schools at the right time with proper presentations, it would appear advantageous to concentrate on that level. The grade schools offer the broadest reflection of the community as a whole, and the grade school class is a much more cohesive unit than any found in the secondary schools.

If, however, your community is too large or your resources are too limited to do a comprehensive job with the grade schools, it would appear

wiser to focus your attention on the high school group. Although the base is not so broad, the modern high school provides a good cross section of the community, and economic and financial topics—not suitable for grade school audiences—can be introduced.

Activities in Field of Higher Education

Although this discussion is concerned primarily with activities addressed to the lower schools levels, note should be made of the opportunities which present themselves when colleges, medical schools, or training hospitals are located in your community. Courses in economics, sociology, government, and practically all the sciences, pure and applied, offer fertile fields for cultivation at the college level.

The opportunity of paramount importance, however, is that which enables you to reach medical students and nurses in training. They are on their way to becoming the health "authorities" of tomorrow, and their knowledge or ignorance concerning the relation between public health and water treatment can have a profound effect on public understanding of the water works job. Moreover, as many of these men and women will follow their professional careers in other localities, educational efforts on your part will prove of benefit far beyond the confines of your own city or town. Acceptance of the responsibility offered you by circumstances will help your whole profession and the whole water works industry.

Despite the vital significance of safe water to community health, medical schools and training hospitals, of their own accord, do not, as a rule, give the subject the attention it deserves. You will find that there is much which students and trainees do not know and which, for their own good as well as yours, they should know. Make their education a major undertaking, and use every influence at your command to secure the cooperation of medical school and hospital authorities in the presentation of your story.

Selection of Water Works Educators

Returning to the general school program, one important consideration remains before discussing methods and procedures. That concerns the selection of the particular representatives of the water works who will do the educating job. Generally speaking, it should not be a responsibility of the top executive. Of course, this will be determined by the size of your community. In smaller places, there may be no one else qualified to undertake the work. But, if possible, it should be assigned to a representative at the secondary executive level or, in large communities, to a specialist who will do very little else.

There are several reasons for this. First, of course, is the fact that a top executive cannot undertake the time commitments required. Second, the average system manager is likely to talk over the heads of his audiences. Third, it is rather desirable that the school representative should not speak

as the final authority on water works policy. Certain types of questions may arise which should be handled with finesse. If the school speaker can withdraw behind the skirts of higher authority, his position will be much easier and less likely to produce embarrassing results.

In picking men for the school educational job, you will want to be sure, of course, that they possess a well rounded knowledge of the water works and its operation, that they are enthusiastic about the service which a water works renders, and that they are personally loyal to you and to the particular organization which you head. If possible, you will seek out those who display some interest in children or youth. Men, for example, who have proved themselves successful as Sunday school teachers or scoutmasters would be ideal for the job. They should possess a feeling for the vocabulary of the various age groups they will address, and should be able to talk plainly, in a pleasing manner, and with enthusiasm.

Naturally, you will have to make compromises, but, by bearing these desired characteristics in mind and by providing your educators with good material, it should not be too difficult to develop effective and dependable representatives to carry forward the school program.

Characteristics of the School Program

Whether your basic program is keyed to grade school or high school audiences, it will have as its objective the implanting of a general concept of what water means to the individual and the community and how the water utility delivers safe water in quantities to meet all needs. To make this point with maximum effectiveness, your educational program should embrace three elements:

1. Some form of presentation in the school by a qualified representative of the water works.
2. Some type of material for the individual student to keep, refer to, and—quite likely—take home.
3. A properly guided tour of the water works itself.

The order in which these elements are employed will depend on the teachers' various programs, the necessity for setting up practical working schedules, and other considerations, but, in general, it appears that the sequence shown above follows a logical pattern. First comes the presentation; next the children review it with the help of the material given them; then they go and see for themselves what it is all about. So far as is possible, the whole operation should be concluded within a comparatively brief period of time—2 weeks at most.

Building the Presentation

The term presentation has been employed because it can actually take several different forms. It may be given as a straight talk, or with demon-

strations or slides. It may be given as a sound or silent movie, or through the use of recorded sound and slides. But regardless of the method employed, the organization of the subject matter will follow much the same course, building first an appreciation of water's importance and second an understanding of what the local water system means to the individual and the community.

The basic outline will probably work out somewhat like this:

1. Where water is found, where it comes from, where it goes.
2. How water serves man—for drinking, bathing, and washing things; to make things grow; and as a source of power.
3. How water serves the community—fire protection, street cleaning, industrial uses.
4. What happened when people began living closer together, how they fought fire when the town was small, sickness in early days from polluted water.
5. How it became necessary to set up a system for securing water in quantity, making it safe, bringing it to people.
6. Where water comes from today, how it is stored and held in readiness to serve people.
7. How it is made clean and safe.
8. How it is brought to faucets and fire hydrants.
9. How it is always being watched to make sure that it is safe.
10. What the water meter is and how it works.
11. The water bill—what the user pays for. (Point 11 should be kept very simple for grade school audiences but may be developed and explained in more detail for high school groups.)

In the actual development of your presentation, you will doubtless wish to amplify some of these points and, perhaps, play down or eliminate others. You may wish, for example, to devote more time to the historical background of water procurement or enlarge upon the role the water system plays in determining the community's future. It is suggested that you refer to the talk outline given in Part 2 for possible hints. If you are aiming the presentation at grade school children, however, it would be well to keep the story simple. For high school students, certain enlargements might be desirable, and more attention might be given to the economics of water supply.

Form of Presentation

Reference has already been made to the fact that this material can be presented in several different ways. What you do will depend on your resources—both human and financial—but it may prove helpful to review the available forms in more detail.

The simplest, of course, is the straight talk, given without the aid of any device other than the speaker's personality and capacity for interest-

ing, easily understood speech. Even a good talk will be made better, however, by the employment of visual material, particularly when children constitute the audience. A simple wall chart, showing how the water moves from original sources through pumping stations and treatment plants into the mains, is easy and inexpensive to prepare and does much to clarify the story. Or, for ordinary classroom talks, the operation may be charted on the blackboard. One word of warning—do not use material which must be passed from child to child; it is confusing and distracting.

Any kind of demonstration will add interest. Just shaking up a jar of muddy water and letting it settle will help make plain one of the basic steps followed in preparing river water for human consumption. Or swirling soap around in a glass of untreated hard water and repeating the action in softened water will bring out the value of a softening plant.

With a little ingenuity and effort, a number of easily followed demonstrations can be developed and a kit prepared in a compact carrying case. It is well to remember that your objective is not scientific exactness but the finding of ways to convey the principles of operation easily and obviously.

More elaborate than the straight talk—or even than the talk with simple demonstrations—is the illustrated presentation, using slides (they should be in color). Most schools today have projectors and screens, and your only responsibility is to provide a set of picture slides. If the subject matter follows the outline suggested, some of the general background pictures will have to be secured on the outside, and you will have to employ a photographer or appoint a good amateur, if one is available, in your own organization to make a set of pictures of your system.

Here is one of those many opportunities for advancing several aspects of your public relations program at the same time. It is hard, today, to find any business organization which does not include at least one camera fan, and he is generally an enthusiast about color photography. By encouraging the hobbyists in your own organization, you build good personnel relations while securing material of practical value to your educational activities.

All this, of course, involves some expense. The results, however, will thoroughly justify the investment. One of the advantages of simple slides over other forms of picture presentation is that making changes in subject matter is not a major operation. Of course, a saving can be effected by not trying to illustrate the whole talk—particularly the initial background portion—reserving the slides to depict only the actual water system and its operation. The talk as a whole will hold together better, however, if it is illustrated throughout.

Most dramatic of all presentations is that provided by a motion picture film. Experience has shown that a water utility offering an attractive film of its operations will find plenty of audiences, both within and outside the school system. As the preparation of a film involves a good many

considerations which do not belong in a discussion of the school program as such, this matter will be taken up at the end of Part 5.

Another visual education device which is growing in use is the sound–slide film presentation. This is the modern version of the lantern slide lecture, with the still pictures arranged on a roll of film and the talk itself transcribed on a record. Use of this device is indicated if it is desired to present a definite, official version of the water works story under all circumstances. Records giving adaptations of the story keyed to various age levels can be made, thus providing a highly desirable degree of flexibility in the use of the films. Special equipment is required.

Material for Student Use

Telling the water works story to school children is important, but, to secure the best educational results, some form of material should be provided for the individual child to use in refreshing his recollection of what he has heard. This can consist of a few mimeographed or multigraphed pages, presenting the highlights of the story, but a much better job will be done by some type of illustrated folder, with pictures of reservoirs, treatment works, pumping stations, and laboratories; charts showing how the system operates; and diagrams clarifying the technical processes employed.*

It would, however, be well to try out material in tentative form before investing in plates and printing. In the course of a year or so, you will discover what goes over, what does not, and what requires amplification or simplification. Call in some of the youngsters of your own neighborhood and get them to review and criticize the material. When you are convinced that it is effective, print it, but not before.

It would be desirable if the material did not appear too much like a rehash of the presentation itself. One way to effect this is to rephrase the information in question and answer form. Or, particularly if your program is aimed at grade school youngsters, it could be presented as a story, say, of the visit of a few children to the plant and around the system.

It should not be necessary to include the introductory background on water itself but more emphasis might well be placed upon the historical development of water service. More detailed descriptions could also be given of the treatment processes, and greater attention paid to the relation between water service and community growth. In general, the material given the child following the presentation should lead him on just a bit further in his understanding of the water system and its operation.

If the folder or leaflet is to be distributed prior to a visit to the water works, two or three blank pages might be provided under a caption, "What

* *The Story of Water Supply*, a 16-page pictorial (color cartoon) booklet designed to acquaint the junior high school student with the history, accomplishments, and workings of public water supply systems, can be purchased in quantity from AWWA. A teacher's manual, for use in conjunction with the picture book, is also furnished.

I Saw at the Water Works." Thus, the child would be invited to amplify the information presented with a review of his personal impressions.

Ultimate Step—The Plant Visit

The final and key step in an organized educational program should be the plant visit. And it should be handled in a way that will leave the child properly impressed. This calls for thought and attention to detail on the part of all entrusted with the responsibility of showing school parties around units of the water works. Whether your operation is large or small, it becomes your duty to make sure that every staff member who participates in this work realizes the importance of these young visitors, and that no air of boredom or indifference should nullify the effect you seek to make.

The exact way in which you handle groups will depend, as always, on the character of your operation, the physical extent of your installations, and the number of visitors. In general, however, you should plan to present the essential highlights in the course of a 1–2-hr tour.

It is desirable, if possible, to present some special activity, like the washing of a filter, during the course of the visit, but, if a good many groups must be cared for, this may not be practicable. As an alternative, demonstration models might be employed. (An article on this subject, by H. J. Abrahams, appeared in the December 1940 JOURNAL, Volume 32, page 1975.)

The plant tour should generally follow the course of the water, with groups broken up into units small enough to hear all the comments and explanations. At times it may not interfere with the logic of the presentation to have one subgroup examining one phase of the operation while another examines a complementary phase.

One question that arises is whether to have each group conducted through the water works by a single guide or to use divisional guides, each specializing in one portion of the inspection. If your community is small enough so that all children can be guided by the same person, the former method may be preferred. If various members of your organization must help, however, consideration should be given to the point raised by a water superintendent who has for many years conducted a highly successful educational program in his community. He states: "Our earlier method of assigning a certain employee to guide his particular group throughout the plant resulted in creating different impressions. It is practically impossible for different employees to use the same phraseology when explaining various phases of operation. Therefore, whenever one employee is assigned to the same place or phase for all groups the possibility of creating different impressions is remote." This official also emphasizes the desirability of setting up visits on a definite time schedule or employing a standard written description as a base for all studies and restricting questions to the end of the basic talk.

Specialized High School Program

Once a broad, basic program, suitable for presentation to all children, has been developed and placed in operation, consideration can be given to the development of more specialized activities aimed at high school students. High school work begins to grow specialized during the sophomore year, but it is as juniors and seniors that most students start to develop their particular fields of interest. Working out specialized programs will, therefore, probably prove most productive if addressed to the upper classmen.

In this connection, it should be pointed out that, in the smaller community, the water works is frequently the only institution or establishment in town which provides practical demonstrations of applied physics and chemistry; it may also offer the only good example of public health protection and one of the few facilities for the study of biological specimens. It thus can come to serve as an important adjunct of the local high school, and every effort should be expended to take full advantage of this possibility.

This does not mean that programs of cooperative activity cannot be developed in larger places, but, in towns and cities with varied industrial and commercial enterprises, other demonstration facilities will also be available, and the opportunity to render conspicuous service to the high school faculty and student body will not be so pronounced.

In looking over the high school curriculum, it will be found that the water works story can be introduced into a wide range of courses to good advantage:

1. *Civics.* Highly pertinent, offering opportunity to present story of service, effect on community health and well-being, relationship to municipal government, economics of operations, political factors, importance to community's future.

2. *English.* Interesting subject matter for themes and compositions, particularly when descriptive and explanatory writing is being taught.

3. *General Science.* (Frequently given as a required freshman high school course.) Excellent opportunity to present complete story of water collection, distribution, and treatment in relation to various branches of science.

4. *Chemistry.* Opportunity to provide laboratory tours and demonstrations—setting up simple experiments students can perform themselves—showing application to water works job.

5. *Physics.* Similar opportunity here—with demonstrations of physical properties of water, handling of material in solution, development of pressure, operation of pumps, and so forth.

6. *Biology.* Study of aquatic organisms, plant life, bacteria; effect on safety, taste, and general character of water; how controlled. Laboratory tours and classroom demonstrations.

7. *Physiography (elementary geology).* Water resources of area; mineral content; problems of drought, flood and erosion; field trips and classroom demonstrations.

8. *Commercial courses.* Water works bookkeeping, meter reading, computation of charges, billing, and collection.

9. *History.* Effect of water supply on development of people, communities, and nations; early devices for water procurement; effect on development of local community; how water works affects community today.

It may not prove practical to develop some of these channels of contact, and further study may indicate more valuable ones not mentioned here, but the point is that there do exist sufficient logical relationships to make possible a widespread program at the specialized high school level. Every student can be reached through one or another of these approaches, and the same student can frequently be reached through several of them.

Getting Maximum Returns From the School Program

So far, the school program has been discussed from the point of view of your contributions to the educational process. Getting the story across is the first and essential job. But, to secure maximum value from the educational effort, the individual student should be encouraged to give something of himself in return. He will remember the story much better if he has taken some step or steps to reinterpret what he has learned in terms of his own experience.

Teachers know this, and you should find little difficulty in persuading them to follow through with a work program based on the material you have presented. At the specialized high school level, where your cooperation amounts to a demonstration of how academic information can be applied to practical problems, a variety of classroom projects will develop quite naturally.

It is well to remember, however, that your school program is not an end in itself but is actually part of your overall public relations effort. It is to your interest to extract from the time and trouble expended the fullest measure of public relations benefits. You will do well, therefore, to offer the schools and their students every possible assistance and inducement in the development of projects that will stimulate continuing interest in the material you have presented.

Grade School Project Suggestions

As a first step in enlarging the effectiveness of your work, it might prove helpful to provide teachers with outlines for suggested projects, showing various ways of tying in your water works presentation and the plant tour with regular classroom work. To prove most beneficial, such outlines should be sent out several weeks in advance of the school presentation, so

that teachers will have ample time to work up the most appropriate applications of your suggestions.

Ideas along these lines are too numerous to list completely, but a few samples will indicate the kind of projects which should be helpful. Here are some, appropriate to grade school use:

1. *English.* Compositions, written or oral: "What Interested Me Most at Our Water Works," "Why We Have a Water Works." "Water—The Fireman's Friend." "Story of a Drop of Water and Its Adventures Through the Water Works." "Letter to My Father—Why You Should Visit the Water Works." Preparation of a water works notebook.

2. *Art.* Sketches of water works scenes or water in use—park fountains, fire fighting, and the like. Simple posters on theme, "Don't Waste Water" or "Visit Your Water Works." Covers for students' own water works notebook.

3. *Mathematics.* Meter reading. Problems in computation based on water consumption and rates, perhaps in students' own homes or in school. Problems based on applications of chemicals to water supply, rate of flow, storage capacity, costs of service, and other facts brought out in presentation and tour.

4. *Geography.* Effects of water supply on peoples of world, their habits, ways of life, development, and progress.

5. *Elementary science.* Building of simple models, experiments showing mineral content of water, simple biological studies and experiments.

Naturally, these are ideas which should be worked out with representatives of the school system and should be appropriate to the courses of study and teaching methods employed in your own community. It would be well, too, to confine your suggestions to general lines of thought, giving the individual instructor plenty of leeway in their precise application.

High School Project Suggestions

The opportunity for developing interesting and worth-while project activities in both the basic and specialized program expands greatly at the high school level. Each specialty, properly handled, permits the development of a series of projects in itself. These should yield results of particular public relations value. Here, however, where teachers are specialists, you will probably find it more desirable to work out ideas with the individual instructors or department heads rather than to try to prepare all the outlines required. Of the many ideas available, a few will suffice to indicate workable approaches:

1. *English.* Essays ranging from the merely explanatory to the analytical and interpretive; discussions of effect of water supply on community, human activities, business, and industry; human-interest stories on water works personnel; perhaps even experiments in fiction writing, using water works as background or water supply crisis as key action of plot. A pro-

vocative subject might be "The Day the Water Works Didn't Work," with students imagining the community without water service.

2. *Science.* Wide variety of projects, both in general science survey courses and in physics, chemistry, and biology. Construction of complete model treatment plant, series of experiments in water works chemistry, pumping operations and pressure-flow regulation developed on laboratory scale, raw-water bacterial cultures.

3. *Civics.* Projects making use of the fact that water works is integral part of civics course subject matter. Debates on topics such as: "Resolved: Blankville's water system is adequate to meet the needs of the next twenty years"; "Resolved: Hilltown should vote a bond issue to construct a new water treatment plant"; or "Resolved: Our city should extend water service to suburban communities outside its corporate limits." Naturally, it would be preferable to pick subjects that either were or might soon become matters of public debate.

4. *Art.* Posters on water works subjects, such as antiwaste campaigns or invitations to public to visit plant; diagramming treatment works and other installations (for mechanical-drawing students); sketch class visits to watershed and reservoir areas.

Along with actual classroom projects, the activities of the various high school clubs should not be overlooked. Frequently they can be interested in some special activity for which insufficient time is allowed by the regular scholastic schedule of work. Most high school clubs are supervised by instructors, and contact with them should provide leads.

Enlarging Influence of School Projects

Although the purpose of school projects is primarily to interest the younger elements of the community and convert them into citizens who will be well informed on water works matters, the activities undertaken can frequently be made to yield immediate returns on a more extensive scale. They can be used as a device to create interest among the older citizens as well, and to secure valuable newspaper publicity. One of the most effective ways to achieve this is through the prize contest. Projects such as essay writing, poster and model making, mechanical drawing, and the like all lend themselves to the contest idea, and prizes do not have to be large to arouse enthusiasm.

Naturally, all the parents, relatives, and friends of the prize winners will take an interest in their achievements, and the actual awarding of the honors can be made into a public occasion of considerable importance. Moreover, the contest lends itself to considerable coverage by the press. Announcement of the contest and its terms, announcement of the closing date and judges, announcement of the prize winners, the report of the award ceremonies, pictures of the prize drawings and models and of the prize winners—all will find their way into the editorial columns. The smaller

the community, the more attention will be paid to the whole program, but, even in big cities, events of this character attract much attention.

And this is not the whole story. Prize-winning posters—sometimes all of the entries—can be displayed in a public place, perhaps in the water works office, and the same applies to drawings and models. Prize-winning essays can be printed as a newspaper advertisement or, perhaps, published in leaflet form and distributed with water bills. A good, lively school contest, in fact, can be employed in all sorts of ways as an instrument to build interest, goodwill, and understanding throughout the community.

One consideration must, however, receive attention: the actual prize money appropriation. If yours is a privately owned utility, the awards should come out of your own budget. If it is a municipally owned system, you may or may not be in a position to allocate funds for the purpose, but do not be deterred. There are many other organizations in the community interested in winning the goodwill of the younger generation—and of their parents—and they will generally be glad to cooperate with a branch of the local government. The newspapers themselves frequently sponsor contests aimed at improving citizenship. Local department stores are often glad to show their civic-mindedness by backing such affairs. Local groups, such as the chamber of commerce, the merchants' association, the luncheon clubs, and others, can be persuaded to underwrite the costs.

A Field Worth Cultivating

Much time and energy can be expended on working out a comprehensive school program. In the smaller community, this may be a job you will have to take entirely on your own shoulders. As the town and its water system grow larger, you will assign various portions of the task to others. But never lose touch with the school program. Make it a personal responsibility to observe at least a few presentations yourself and maintain contact with school officials and teachers, for here is a field worth cultivating, as all who have done so with any degree of thoroughness will gladly testify. The youngsters of today are the adults of tomorrow!

A Helpful Educational Tool—The Water Works Movie

A good motion picture of the water works will always prove a valuable aid to your public relations activities, and it will find employment in many places besides the schools. Luncheon clubs, civic associations, women's clubs, youth groups, church groups—all will welcome an attractive movie. Once word gets around that you have a film to show, you will get plenty of invitations to show it. Nevertheless, it will prove of particular value in your school program, and it has seemed desirable to append the discussion of motion picture making at this point.

A number of water works managements have produced movies of one kind or another. For the material in this section, credit is due especially to W. Victor Weir of the St. Louis County, Mo., Water Co. and to John E. Kleinhenz of the Indianapolis, Ind., Water Co., both of whom have had extensive experience in preparing such films. Both, it might be noted, believe that a motion picture is one of the best of all vehicles for taking the water works story to the public, and both have proved that the story has all the elements for the creation of a successful film.

Decision to Make a Motion Picture

Whether it is worth while for you to make a motion picture or not depends upon a wide variety of factors. If it is to be a completely professional job, costs will run between $12,000 and $18,000 and you should have enough uses in view to justify such expenditure. As both Weir and Kleinhenz have proved, however, it is not essential to employ professionals. If you, one of your associates, or one of your fellow townsmen is an amateur movie enthusiast, accustomed to shooting everything in sight anyway, you might well be justified in turning out a water works film even though your community is small and your budget modest. There is probably more than one amateur in your community who would welcome the opportunity to tackle such a project just for the fun of it, seeking reimbursement only for actual out-of-pocket expenses.

Be assured on one score—amateur movie making has progressed to the point where very creditable pictures can be turned out by the hobbyist. Equipment and film are high grade, easily handled, and reasonable in cost. You may wish to have specially prepared titles and other refinements added, and these will push the cost up above the expenditures involved in making a simple home movie, but, all in all, the job can be produced for little more than would be spent in making the usual collection of family scenes and personal activities.

One point, however, should be made. You should work with 16-mm film. It is difficult to project 8-mm film successfully, except for very small groups. The projected image should be 4 × 5 ft or larger.

Some General Considerations

In planning a water works film, you should have in mind the conditions under which it will be exhibited and the types of audience to whom it will be shown. The average showing will last between 20 and 30 min, whether your objective is school or general use. With 16-mm film, this will call for a total length of from 500 to 800 ft. The actual film used will run considerably more, as allowance must be made for wastage equal to one-third to one-half of the length of the completed picture.

To make one 850-ft film, Kleinhenz actually shot about 3,500 ft, but this admittedly is a very high proportion. Nevertheless, it is better to

Suggested Introductory Sequence and Script

Picture Sequence	Time *sec*	Script
Titles	15	(No voice while title is shown.)
Globe revolving slowly	5	We are all familiar with water. Water covers three-quarters of the surface of the earth.
Cumulus clouds	4	Clouds form from water vapor in the sky.
Dark cloudbank	3	The clouds which shield us from the glaring heat of the sun are the protecting shield which allows life on the earth.
Rain falling on pavement (use hose spray, if necessary, in making closeup shot)	5	Rain falls as a beneficent gift from the heavens.
Pond or lake	4	Ponds and lakes bejewel the earth's surface.
Creek or river	5	Creeks and rivers course their ways to the sea.
Colorful sunset	4	Water vapor paints the gorgeous sunsets.
Fresh fallen snow	4	Snow lays a pristine cloak over the earth.
View of your city from top of water tower	4	Today we live in cities, great and small, and we know water by the ways we use it.
Another view of your city	4	
Sweating man drawing and drinking a glass of water	5	We think of it as something to drink, if we can't get anything else.
Steaming pot on stove	3	We cook with it.
Mother and daughter washing dishes	4	We wash dishes with it.
Baby splashing in bathtub	6	We bathe the baby. Saturday night now occurs every day of the week.
Sheets billowing in wind	3	Our clothes are made white.
Sprinkler revolving on lawn and boy holding hose	5	In the summer, when Mother Nature forgets us, we keep our lawns and shrubbery green.
Carrots being pulled from ground and rinsed in bucket of water (closeup, hand and carrots only)	5	Our vegetables are solid and luscious, thanks to irrigation.
Vase of flowers, revolving slowly	5	Water furnishes enjoyment—beautiful flowers in a vase of water.
Aquarium	4	Iridescent fish in an aquarium.
Children in pool	4	Human fish in the most enjoyable of summer sports.
Diver springing from board	3	
Fire destroying house (use miniature model)	6	But we also have fire, benefactor and destroyer.
Fire truck leaving station	4	Highly trained fire fighters are on constant and alert duty.
Fireman opening hydrants and water spurting from nozzle	6	The silent, unobtrusive fire hydrant is always in readiness for use in fighting fires.

overshoot material and be sure that you have plenty than to find yourself at the editing stage with insufficient subject matter available.

Color should be employed, despite the extra cost. Weir recommends regular 16-mm "Kodachrome" to the amateur for outside views and "Type A Kodachrome" for interior shots. Color film costs approximately twice as much as black and white, but the results are so much more effective that the extra expenditure is thoroughly justified.

There is general agreement that the film should be accompanied by a spoken commentary, but opinions vary on whether this should actually be recorded on a sound track or presented in person by a representative of the water works. The virtue of the recorded story is that it can be worked out in detail, carefully edited to make sure that it represents exactly what you want to say, and transcribed without further concern about on-the-spot interpretations by the narrator.

On the other hand, preparation of a sound track calls for professional assistance, adds considerably to the expense, and causes trouble if later amendments, additions, or deletions are made on the film. Most serious of all, a recorded version is completely inflexible. With a water works representative personally acting as narrator, language can be adapted to the understanding of the audience, reference can be made to matters of special local interest, and a freer, easier relationship can be established with the group.

Kleinhenz recommends the use of a microphone and the projector public address system in presenting the narration. He observes: "It has been found that sitting beside the projector and using the 'mike' does not distract the attention of the audience as much as standing to one side at the front of the room and speaking without benefit of the P.A. system." This is particularly important where notes or a written script are employed and a reading light is required.

Preparation of a Scenario

Essential to the production of an interesting film is the preparation of the basic story outline or scenario. This applies whether you have your motion picture made by a professional or handle it yourself. The whole purpose of your film is to make people understand more about water itself—its importance to life and to the well-being of the community—and the essential value of the job your particular water works is doing. In many ways, your scenario will be but another version of the outlines you have already developed for school presentations or public talks.

It will be much more detailed, however, covering every sequence you plan to have taken. It is important to remember that rarely, if ever, is it possible to take the various pictures in the order in which the finished story is to appear. As the work goes along, the scenario becomes the checklist by which track is kept of what has been photographed and what is yet to be done. The scenario may, of course, be modified to take advantage of interesting unplanned scenes met with in the movie making, but it should remain the guiding element throughout the job. When all subjects have been covered, they are pieced together in accordance with the story outline, and the film takes form as an orderly presentation.

On the opposite page is a suggested scenario for the introductory 2 min of a water works film, together with the script for the accompanying talk.

This was prepared by Weir and is reprinted from the February 1941 issue of the AWWA JOURNAL (Volume 33, page 204). Further introductory material might be included, such as a look backward at the early days of procuring water, before proceeding to the step-by-step account of how the water provided for your community flows from the original sources to the home tap and the street hydrant.

Moving line diagrams and other chart devices may be introduced from time to time to help clarify processes or explain steps invisible to the eye, and provision should be made for some concluding summary to avoid an anticlimactic ending. One way to conclude is through the use of a quick succession of flashbacks of plant and system scenes, ending with "Mr. Average Consumer" enjoying his glass of water.

Technique of Movie Making

If you make your own motion picture, there are several important facts about the technique of movie making that you should have in mind. Even if you leave the whole thing in professional hands, you should possess some awareness of these points, for you will constantly have occasion to cooperate with the professional in the actual selection of subject matter and approaches. Weir offers the following observations:

1. The medium is that of motion. Wherever possible, there should be motion in shots. Show filters being washed or sludge being removed from basins. Have all pieces of machinery in the laboratory in motion, the stirring machine operating, the hoods being opened and closed, the microscopes being used. Show the color change in chemical tests.

2. Remember that the camera is to record action and not provide it. Have it on a tripod always. Show panoramas only when absolutely necessary, and then slowly and with 3 sec of stationary filming at the beginning and 2 sec at the end.

3. Several short shots from different angles are more interesting and dramatic than one prolonged shot. Four to six seconds is a good length, except when more time is necessary to show a sequence having sustained interest. Check this by timing the length of shots at the next newsreel or commercial picture you see.

4. Closeup shots are usually more interesting than distance views. There is less distracting material in them.

5. Use a proved lightmeter or an exposure guide for all interior and most exterior exposures. Do not guess at exposures unless the cost of film is no object.

6. Use a focusing type of camera with a fast lens. This is desirable because of the many interior shots required in plant and laboratory. The focusing camera can also be used to make titles from neatly lettered color cards or lettered photographs. (Making these caption cards might prove an interesting project for art classes in local high schools.)

7. Take full advantage of color film by making shots as colorful as possible. Photograph plant exteriors when grass is green and flowerbeds are in full bloom. If transition shots are required between sequences, bright flower pictures, fountain shots, or similar colorful subjects may be used while the narrator introduces the audience to the next portion of the story.

A complete dissertation on the art of the motion picture obviously cannot be presented in this space, but the above suggestions are of fundamental value in producing an effective film.

6. Publicity—Powerful Amplifier of Words and Deeds

To win the understanding and confidence of the people of your community, you have at your command both direct and indirect channels of contact. So far this study has dealt primarily with the more direct ways of reaching people—through talks, through relations with employees, through contact with public officials, and through school programs. Channels of direct contact are vitally important, but it is obvious that, except in the small community, only a minor proportion of the public can thus be reached. In towns of even a few thousand population—and increasingly so in larger cities—it becomes necessary to rely on vehicles of public communication to extend the influence of words and actions.

Two such vehicles exist—advertising and publicity. Both are important tools in the building of an effective public relations program. Both make use of the printed word, the picture, radio, and television, but they possess sharply different characteristics and call for correspondingly varied techniques. Part 6 of this study will deal with publicity only, while Part 7 will discuss advertising. In order to identify clearly the precise scope of this review, however, a word or two of explanation about both vehicles may prove helpful here.

Advertising, whether it takes the form of space in publications, sponsored radio or television programs, billboards, or the like, is a purchasable commodity and is under your complete control, subject only to the laws of libel, decency, and fair trade. You can use it to say whatever you happen to want to say, regardless of whether anyone else thinks your message interesting or important. You have bought and paid for the space or time employed, and it is yours to use freely on your own behalf.

Publicity, on the other hand, consists of material which some one other than yourself believes to be worth printing or broadcasting or recording on a newsreel. It applies to all the things which appear in the editorial columns of newspapers or magazines—news stories, feature articles, human-interest items, editorial comments. It applies to the time given for unpaid

mentions or appearances on the air. It covers everything which an editor will use because he believes that some or all of his audience will find it interesting, informative, or entertaining. Although spending money to create good publicity may prove worth while, publicity cannot be bought as advertising is bought. Rather, to use the word employed by professional publicity men, publicity must be "sold."

It is obvious that, in the water works field, publicity must carry the biggest share of the burden in widening spheres of influence. The greater proportion of water systems is publicly owned, and the philosophy of public ownership generally denies a role to paid advertising. There are important exceptions which have done much to indicate that the wisdom of such a restriction is quite open to question. But the fact remains that many water works executives have no budget for promotional expenditures.

Whether you do or do not have the help of advertising, publicity should be a matter of major concern. It is the amplifier through which all your public relations activities can be made to reach more people and produce greater results. Some indications of how it works have been presented in previous sections. Here the whole procedure will be examined in more detail. Some of the suggestions offered may go beyond your needs, but they rest upon principles applicable wherever a newspaper exists.

Foundations of Sound Press Relationships

Consistent success in obtaining helpful publicity depends upon a good working relationship with the press of your community. The newspaper is your most valuable instrument for expanding the effectiveness of all that you say and do, and you cannot know too much either about its place in the scheme of things or the particular way in which it functions as a gatherer and dispenser of news.

It is essential, first of all, to recognize the newspaper as a privileged institution. Freedom of the press is one of the cherished liberties of a democratic society. The right to report and comment upon anything of interest to the public is embodied in the First Amendment to the Constitution of the United States and has been vigorously maintained throughout our history. One of the first restrictions to be lifted at the end of any war is that affecting the presentation of news.

Like all rights, freedom of the press carries with it a responsibility—to provide the people with truthful news and honest interpretation. Although all newspaper owners have not been equally scrupulous in the discharge of their responsibility, although prejudices and opinions do sometimes color a paper's presentation of a given set of facts, and although an overzealous urge to make news interesting frequently leads to exaggeration and sensationalism, the record of the press as a whole reveals a reasonably high standard of professional integrity.

No newspaper can succeed if it does not provide a substantial portion of the public with the kind of information it wants to receive, presented in a style which it finds appealing. The success of a "yellow sheet" testifies as much to the level of its readers' interests as it does to the low standards of its publisher. Your local papers, regardless of whether you like their particular policies or methods, are all channels of communication with various segments of the community which you serve, and you will do well to remember this in dealing with their representatives. Reporters and editors recognize one boss above all others—the body of readers they serve. They are the representatives of the people, none the less real for their want of legal status, and they expect to be treated as such.

A Logical Source of News

Whether yours is a privately owned system or one controlled by some form of public agency, your business is a matter of public concern, even though the public may be all too willing to ignore the fact so long as everything goes well. The press, therefore, has every right to make your business its business, and you, in turn, have a right and obligation to draw the attention of the press to any matter which the public should know about.

You are a logical source of news, and it is the purpose of planned and controlled publicity, integrated with your other public relations activities, to make the most of that fact. As you may already have learned, the reporters seek you out quickly enough when something goes wrong. A publicity program tries to create an equal degree of interest when things are going right, as well as to assure fair treatment from the papers when difficulties do arise.

To secure good results, you should, therefore, know something about the conditions which govern the attitudes and actions of editors and reporters and be prepared to cooperate in the ways that will be most helpful to them. Toward that end, it appears worth while to consider the nature of news as the newspaper profession looks at it, to review the mechanics of news gathering and presentation, and to give some thought to the position of the reporter whose job depends upon fulfilling his assignments and uncovering newsworthy information.

Before proceeding, however, a few words should be said about your mental attitude toward the press. It is important to remember that a free press is one which is free to criticize as well as to praise; free to report unfavorable as well as favorable aspects of the news; free to evaluate the importance of what you say and do and report it or ignore it, display it or bury it; free to agree with you in one instance and disagree in another. Acceptance of this fundamental condition may not always come easily but once you do accept it, and learn to live with it philosophically, you will have taken the first important step toward good relations with the newspapermen of your community. You cannot win by fighting the press or the re-

porters who function as its representatives. They are always in a position to have the last word. Join forces with them and you will get somewhere!

The Newsman's Idea of News

Many attempts have been made to create a quick, comprehensive, newspaperman's definition of news, but none is wholly accurate. Funk and Wagnall's *New Standard Dictionary* gives as its first definition of news, "fresh information concerning something that has recently taken place," and as its second, "anything new, strange, or unexpected." The newspaperman would subscribe to both these definitions to a certain degree, but would add that the information should possess interest, importance, or entertainment value to the people who read his paper.

News deals with events and happenings rather than conditions; with the abnormal rather than the normal. Conditions make news only when they depart from what is normal and expected, and the normal and expected make news only when their very normality extends beyond normal limits. The ordinary citizen who has never done anything newsworthy in his life suddenly rates a picture and a story when he attains the century mark. Ten decades of ordinary existence is in itself something out of the ordinary.

Usually there is no news in the fact that the water works is meeting the needs of the community, providing safe and palatable water, supplying adequate fire protection, and otherwise fulfilling the functions for which it was designed. That is what the water works is supposed to do, that is what everyone expects it to do. Although publicity to this effect can be secured, when properly developed, mere announcements concerning the smooth discharge of the water system's responsibilities hardly constitute news, and you should not be disappointed if the reporters pay little attention to such statements.

The function of a publicity operation is not just to tell the press how good you and your water works are but to call attention to happenings and, if necessary, to make things happen which will transform a nonreportable state of affairs into events worth news space and thus demonstrate that things are going well.

The kind of happenings which merit attention from the press will vary greatly, depending on the size of your community. Little things of considerable interest to everyone in a small community will hardly command space in papers published to meet the needs of large groups of readers. On this point, you will do well to study your community and its papers, and govern yourself accordingly. Consult, too, with the reporters themselves; try out various types of items on them, and you will soon obtain definite clues about what is and what is not usable. Further suggestions on this point will be reviewed later on.

How News Is Gathered and Processed

Outside of purely mechanical operations, like typesetting and printing, there are five steps in the process which converts a happening into a piece of published news:

1. Deciding to investigate the occurrence
2. Gathering the facts
3. Writing the story
4. Editing the story, determining its length in relation to its importance, providing headlines and subheads
5. Placing the story in the paper in relation to all other items appearing in that issue.

On a small weekly, all these functions may be the job of one man; on a larger weekly or small city daily, they may be distributed among two or three; on a great metropolitan paper, each step may demand the attention of whole groups of people. The first step—the decision to consider reporting the event—may come from the editor (usually known as the city editor) in charge of local news coverage, or it may be made by a reporter out in the field. The second step is the reporter's job: his primary responsibility is the gathering of the facts. Usually he also takes care of step three, the actual writing of the story. On larger papers, however, he may be simply a fact-finding specialist who phones or brings his data to the office, where a "rewrite man" prepares the text. This method is used by all reporters when time is short or their presence is required on the spot for further investigation of an occurrence still in progress.

The fourth and fifth steps are editorial functions and are generally beyond the control of the reporter. The editing of the copy is of key importance in determining the public's impression of the news, for the copy editor not only corrects and smooths out the writing but also writes the headlines and subheads which summarize the facts presented. The fifth step—determination of what rates major position on page one and what is to be tucked away on inside pages—likewise exerts considerable influence upon the public's reaction to the events of the day and is the responsibility of a major editorial executive (usually the managing editor).

From your point of view, the important thing is recognition of the fact that—except, perhaps, on a small weekly publication—the reporter is only one member of the team that gets out your local paper. He happens to be the member of critical importance to you, because he is the link between you and the printed page and he can do much to help you get your story before the public. But he cannot guarantee the relative importance your news will possess on any given day, nor can he commit his paper to attitudes at variance with editorial policy and point of view. Recognition of these limitations, inherent in his job, will do much to gain and keep friendly relations.

Two Working Methods

Reporters cover the news in two ways: on specific assignment from their city editors and on regular assignments to known sources of news. Any paper large enough to have two or three reporters nearly always has one man who covers the municipal offices, the courts, and police headquarters on a regular daily schedule. As cities and papers grow larger these "beats" are further specialized, so that one reporter may handle nothing but city department news; another, court news; another, police headquarters news; and so on. In county seats and state capitals, the range of beats is further extended to cover county and state offices.

The water works which functions as a department of municipal government stands to benefit greatly from this method of news coverage. As one of the official agencies of the city, the water department belongs on the beat of the city hall man, and it is his responsibility to check the department for news, along with all other departments. Under such circumstances, it should be very easy for you to develop a pleasant acquaintanceship and a cooperative working relationship. About all you have to do, really, is to let the reporters know that they are always welcome in the water department, that you are always ready to answer questions, and that you will always pass along such new facts as you may possess each day, letting your press friends assess their newsworthiness.

The privately owned water company, or a public system not so completely associated with the local government, may not come to the regular attention of the press in this way. Stories about such water works will normally be covered on specific assignment from the city editor. Eventually, as you get acquainted with individual reporters and they come to regard you as a consistent source of news, you will find that they will drop in on you fairly regularly and thus establish a beat relationship. At the beginning, however, you should notify the city editor when you have something you consider worth printing. It is generally desirable to give him some idea of the nature of the story on the phone or in a note, so that he can appraise its probable importance in advance. He will then assign a reporter to see or telephone you, and the story will develop from there.

The essential first step is to familiarize yourself with the situation in your particular community and to find out where your most convenient and practical connection with the press can be established. Once you have established your proper channel of communication, development of the relationship is comparatively simple, provided, of course, that you play the game wisely and fairly.

Reporters Are Human

A newspaper reporter is a man or woman who earns his living by extracting facts out of what he sees and hears; information, to him, is a pre-

cious commodity. For this reason, he resents the withholding of facts having a bearing on the news he is supposed to obtain; he resents statements the accuracy of which is open to question; he resents the denial of a fact which afterwards proves to have been the truth.

You will find that it pays to be absolutely honest in dealing with reporters. Tell all—the bad as well as the good. The more frank you are, the more they will respect you and the more favorably they will handle the facts in the stories they write. Moreover, you will often find that what seems to you to be a very unfavorable circumstance or happening will, when examined openly, in cooperation with your reporter friends, prove to be much less damaging than you might at first imagine. Your admission of a mistake or mishap frequently invites examination of extenuating circumstances, and the net result of the publicity, although it may not be good, is at least saved from being bad.

Honesty always pays, even when you cannot, for some reason, make facts public. Newspapermen cherish as one of their highest traditions the keeping of confidences. By telling the truth and explaining why it cannot be published, you not only effectively guard against leakage of the story through some unofficial source, but also help the reporter prepare himself to handle the news more thoroughly and effectively when it does break.

Playing Square With Competing Reporters

If your community has only one newspaper, the question of fair play toward competing reporters will not arise. The moment you must deal with representatives of two or more papers, however, this consideration becomes most important. It is quite likely that you will like one paper better than another and that you may get more favorable attention from one paper than from another. It is essential that you never permit your feelings to prejudice your treatment of the men who represent these publications at the news-gathering level. Never deny to one reporter what you are willing to admit to another. Do not provide one man with confidential information without giving his colleague an opportunity to acquire the same data.

As a rule, it is wise to see reporters from competing papers at the same time, giving out your information in the presence of all. This is not always possible but can generally be done. Reporters who handle the same beat for different publications very often work cooperatively, and you should soon find it easy to establish a procedure equally convenient for yourself and for the men of the press. Of course, if you find one reporter consistently interested in your news, while the representative of another paper pays little attention, you may quite justifiably feed items to the man who takes the trouble to come and get them. But, even so, you should never release information of major importance without giving reporters from all papers opportunity to secure it on the same terms.

To all this, there is one exception. From time to time editors and reporters conceive ideas for stories which they then proceed to go out and investigate. In such instances, the story is an "exclusive" with the reporter handling it; if he comes to you, he has the right to ask that you give him the information for his own particular use, at least for a limited time. So-called feature stories often fall into this category, but they are not really news and will be discussed separately.

Building up the Man on the Beat

If you are in the fortunate position of dealing with a reporter regularly assigned to cover your department, make every effort to establish as close working relations with him as possible. Make him a part of the water works family. Take him to lunch occasionally. Ask him to sit in on policy discussions, particularly if a public relations issue is at stake. Take him out on your tours of inspection. See that he knows your divisional chiefs, and that they know him. Invite him and his wife to office parties or picnics.

Furthermore, do all you can to build him up professionally. Do not make the mistake of considering him a mere routine fact getter, not important enough to handle significant stories. Form the habit of clearing everything through him. Give him your biggest and best items, as well as the smaller, less important material. After all, his reputation and income depend upon the amount of worth-while news he brings into his office. If you call his editor, for example, and ask for someone of presumably higher caliber to handle a big news break, or if you send news to the paper direct, you are not only undermining him, but you are also undermining your own best interests.

The man to whom you give all the major news stories that may arise in your department will be much more receptive to your efforts to create news out of less important situations. In fact, if you have developed friendly and closely cooperative relations, if he feels that you always give him the breaks, he will often go out of his way to help you give your story the slant best calculated to win space.

Of course, in a general discussion such as this, it is impossible to anticipate all the conditions which exist in every type and size of community served by a water system. If your town is small and your local paper a weekly, the whole tempo of its operation will be slower—there will be greater interest in all the news you have to offer, and you may quite likely deal with the editor himself. But, regardless of the size of your community or the character of its newspapers, you will find that it pays to deal with the press candidly, cooperatively, and fairly.

Use of Press Releases

The press release is a written version of a piece of news, forwarded to the editor or handed to the reporter on the occasion of his call. It can be

of great assistance to reporters and editors, but, if the story is at all important, they will generally want the privilege of asking questions and discussing the subject in more detail.

When complex statistics are involved, when addresses, specifications, and a quantity of detailed information are to be provided, it is a great help to all concerned to prepare an accurate, previously checked, memorandum. Often, too, when you are to be quoted, you may want your statement prepared in advance to make sure that you say exactly what you want to say. Reporters often find such statements too carefully prepared, however, and seek to get at the facts and reasoning behind the mask of words.

If your office is covered on a regular beat, you will probably find it desirable to prepare such material only when your news does involve figures and complicated facts. If, on the other hand, you do not see reporters regularly, you may from time to time send in stories direct to the editor in press release form. Minor items which are hardly worth a reporter's time will frequently get into the paper through the use of this device.

Press releases should be double or even triple spaced and should carry your name, address, and telephone number in the upper left-hand corner. Thus, if the paper wishes to check up on the story, the desk man assigned to the job knows immediately whom to reach and how. It is also helpful to use a headline summing up the major point of interest. Do not try to write newspaper headlines; simply give the editor something to go by when he starts to read the item.

For example, if you have an item about an old employee retiring, use as your headline: "A. B. Smith, Water Works Foreman, Retiring After 40 Years' Service." Then follow with the details. Do not try to be literary. Just state the facts as simply as possible. The paper will write the story in its own style anyway and may find the item sufficiently interesting to dig up additional facts.

Use of Auxiliary Publications

This discussion has so far been concerned with the use of the general newspapers of your community. In some instances, other local publications may be available, and you should not lose sight of their value. As cities grow in size, neighborhoods within the community frequently discover that the general newspaper cannot give enough attention to purely neighborhood news, and neighborhood publications of various types, usually weeklies, become established. Such publications can have considerable value to you, provided that you send them information of neighborhood interest. These papers usually do not have a reporter available to go to your office, but they are much more likely to accept press releases than are the general newspapers of the city. Check your community, find out if such neighborhood papers exist, and make sure that your publicity plans do not overlook them.

Water districts serving a number of individual towns will find it particularly worth while to direct publicity activities at all the local papers, slanting the stories to reflect the particular interest of the different communities. One of the most successful efforts made in this field has been that by the Washington Surburban Sanitary District, which provides water and other services to a large group of Maryland suburbs of the national capital. Although the Washington papers are counted on to broadcast information to the whole area, a constant flow of material is directed to each of the local papers published in the region.

You may also have local weekly or monthly periodicals—association bulletins, chamber of commerce magazines, trade papers, union papers—offering suitable vehicles for the transmission of your publicity stories. Often these publications are edited by nonprofessionals or semiprofessionals and are not likely to be subjected to the pressure for space put upon newspapers.

Get acquainted with the fields of interest of such specialized publications before approaching them with the idea of using material from you. Then suggest something related to their field of interest. Because water service affects everyone in the community in one way or another, it should not prove too difficult to do so.

Putting the Water Works in the News

This section will deal with some of the material out of which publicity can be made to emerge. There are at your command three principal sources of publicity. First is the "natural" news story, the event or situation which will make news without any special effort on your part. Sometimes you do not even have to tell the newspapers about it—they come to you first. On other occasions, all you need do is to let a fact be known. Interest from that point is almost automatic.

Your second source of publicity lies in the "created" news story, the story that has its basis of interest in something which has been made to happen. The ability to devise such occurrences is what earns publicity agents fat fees, but there are a few simple tricks of the trade which almost anyone can apply.

Third among the sources of publicity are "feature" stories, articles which newspapers use to lend human interest to their pages and which are often not news at all in the usual sense of the word, but rather descriptions, frequently illustrated, of persons, places, careers, or conditions which may be expected to interest a paper's readers.

The 'Natural' News Story

A water works is subject to certain news-making occurrences common in all businesses and individuals, as well as to others peculiar to itself.

Your chief responsibility is to recognize that these occurrences are news and to make sure that the press receives prompt and accurate information concerning them. The notes that follow list a number of examples:

1. Emergencies—accidents, failures of system to function in any particular, effects of drought or flood. The reporters will be coming to you for facts about such events. Even if the news is bad, help them in every way possible. Bad publicity can frequently be converted into a favorable notice by playing up the skill and speed with which an emergency has been overcome. Let the reporters talk to witnesses and to other executives who may know more about the details than you do.

2. Announcements of new facilities, equipment, and installations, or of major replacements and modernization activities. The degree of interest in such news will vary with the size of the community and its newspapers. In larger cities, only the most important new developments, those of interest to large segments of the community, will rate attention. In a small town, on the other hand, acquisition of a new truck is a matter worthy of mention. Your best procedure is to feed all such items to the press and let the reporters guide you. Gradually you will build up a sense of what will and what will not get into the papers of your particular community. Frequently one paper will be more willing to use such material than another. This, too, you will find out by experience.

3. Announcements of rate changes. Such announcements are, of course, matters of the utmost public concern. The important thing is to provide clear and logical explanations for the change, whether up or down.

4. Changes in any regulations affecting customers. Here again the importance of careful explanation cannot be stressed too strongly. The degree of interest shown by the press will depend on how wide the effect of the change extends. A regulation concerning only the commercial laundries of the community would hardly merit the attention received by a rule which affected all water users. But give the information out and let the reporters judge.

5. Explanations of any anticipated conditions affecting the water supply or its taste, color, or mineral content. Here the important thing is timing, getting the news out before the public becomes concerned. When the water-softening operation had to be shut down at Kansas City, Mo., a clear statement, properly timed, produced such complete acceptance of the hard water by the public that Melvin P. Hatcher, the director of the department, was amazed at the lack of criticism. Of course, such advance notice cannot always be given. Then the thing to do is to call the papers immediately, making it possible for them to print authoritative information in the first editions available. Always try to give newspapers word on any difficulty before they hear about it from other sources.

6. Announcement of annual report, annual budget presentation, or similar items called for by the relationship of the water department to the local

government. In releasing such material to the press, it is always desirable to prepare a brief summary or press release in which the highlights of the report, budget, or other documents are summarized. Complete copies of the item in question should also be given out. Thus, you enable the reporter to get the gist of the story quickly, while providing him with all he needs for more detailed study.

7. Items concerning personnel. These can provide one of the most fruitful sources of continuous publicity available to you, and their net value is very high. Names make news, even on big metropolitan dailies, and, as pointed out in Part 3 (personnel relations), the reaction within your own organization is most beneficial. Additions of new employees, promotions, long service records and retirements should all be noted and appropriate news items released to the press regularly. Frequently reporters will use such items as the basis for a more detailed human-interest story and will want photographs. Accidents to personnel are, of course, another source of news and, although in a different value category, should be dealt with forthrightly.

8. Items concerning employee and utility social activities—parties, picnics, sports events. It is always a good idea to invite the reporters, even if the resulting news item is not too important. Reporters, like the rest of us, enjoy parties.

9. Important statements by major water works executives on policy or any matter affecting community well-being. Reports of talks come under this category, provided they contain new information or throw new light on a subject. As pointed out in Part 2, however, the mere fact that you are telling the water works story to a group may not make it newsworthy, particularly if you are presenting familiar material. But when a major issue affecting the water system is before the public, every talk you make may be of interest to the press, and the papers will cover it carefully.

The 'Created' News Story

The borderline between the natural news story and its "created" counterpart is not always easy to draw or identify. Calling attention to an old employee's decades of service, giving a few facts about him, and possibly providing a photograph all come within the scope of a natural news story. But if you take the same circumstance, make it the occasion for a party, have a big anniversary cake, select your prettiest girl employee to help the oldtimer cut the slices, and invite the photographers, you have created an event of considerably greater interest, one which is pretty sure to command more space in the newspapers.

Or suppose you are undertaking a major improvement program which will especially benefit one of the neighborhoods of your community. Your announcement that the work is starting is a natural news story, and may be treated as a fairly important one. But it can be turned into something

of even greater interest, productive of much stronger publicity. An "occasion" is made of the initial step—the ground-breaking, for instance. The power shovel is decorated with bunting; the 6-year-old daughter of the section's leading citizen pulls the lever that moves the first shovelful of earth; the mayor is invited and makes a speech; local civic leaders participate; perhaps the ladies of the biggest neighborhood church serve a luncheon; pictures are taken of everything and everybody. You have thus built up your story to the point where it may well yield two or three times the amount of newspaper space it would otherwise receive: you have made your improvement job something people will talk about and remember.

"Creative" publicity is probably more concerned with building up natural news items into stories of greater impact than it is with making news happen out of the blue. Merely by taking advantage of the opportunities which exist in the normal run of things, a substantial job can be done. Situations do sometimes exist, however, in which it is necessary or desirable to "start something."

Making Events Spotlight a Condition

Newspapers are interested in the status quo only when it is other than it should be. Generally speaking, they are concerned with events rather than a state of affairs. To call attention to a normal condition, something must be made to happen which the newspapers can treat as news.

An example of this has already been given in Part 5 (school programs). An educational program, once it has been instituted, is not news. It goes along much the same way year after year, becoming one of the "normal" activities of the water system. By holding an annual contest for school children, however, with prizes and all the trimmings, attention is refocused year after year upon the water works and the educational work it is doing. The contest is always news. Different children win each year. The work they offer in competition is different. Announcement of the contest is a matter of public interest. So is the announcement of its closing date, the announcement of the winners, and the report of the presentation ceremonies, particularly if they are handled as a public occasion.

The approach lies in analyzing, first, what you have in the way of a condition that is particularly good. Suppose, for example, your street crews are working at a high degree of efficiency, and you would like to publicize the speed with which they can take care of a job that involves tearing up pavement. A bit of competitive spirit is implanted in the men, is built up, and finally reaches the point where a challenge is engineered between two crews. At this juncture, you tip off your press friends that the next major street repair job is likely to develop into something of a contest and that it might be interesting to bring photographers and cover the operation. Or you can actually stage a demonstration contest; get permission to put on the affair as a semisporting event on some not-too-busy

street, give a prize to the winners, and invite the public and press to attend. Here you have deliberately made something happen—something which takes advantage of the average person's interest in competitive achievement—to call attention to one of the routine phases of your work. This is the function of "creative" publicity.

Round-Number Records and Anniversaries

A comparatively simple device for calling favorable attention to conditions is through the observance of round-number records and anniversaries. The ten thousandth service installation, the five hundredth mile of water main installed, the hundred thousandth ton of lime purchased for the water softening plant, each can be made an occasion for at least a news note and, with the cooperation of the reporters, can often be developed into a feature story. The impressiveness of the particular figures you use will depend on the size of your community, but you should be able to work that out without much trouble. Any number that sounds fairly big in relation to the population and physical size of the town or city should make a good item.

The same applies to anniversaries—any of the decade marks are good, and the quarter-century, half-century, and century mark stories can be converted into sources of major publicity. First in importance are the anniversaries of the system itself, but you need not limit the application of the idea to them. Dams, pumping stations, pressure tanks, and filter plants can all be honored and talked about. Each anniversary observed can occasion a review of the service rendered, the amount of water handled, the improvements made over the years, and any interesting events associated with the installation's history.

Major achievement records and anniversaries can be further highlighted by appropriate celebrations and ceremonies—dinners, meetings, parties, public inspection days, and the like. Such events, in turn, produce added publicity. It is well to observe some degree of caution in this particular, however, because an event celebrated to a degree all out of proportion to its importance can look ridiculous and create an unfavorable backwash of public opinion.

Speeches and Statements

The speech or statement directly related to a matter of public concern and having directly to do with the water system and the service it renders has already been listed as a natural news story. Talks and public statements can also be employed for the purpose of creating news. The complete interdependence that exists between the well-being of the community and the efficiency of its water service can, on occasion, give the water system executive a logical excuse for talking about matters beyond the mere functioning of the water works.

A good example of this is provided by questions which may arise in connection with a drive for new industries. Here is a matter of general community interest in which the importance of water supply may not always emerge as a major consideration. By a well timed speech or public statement pointing out either the adequacy or inadequacy of the water supply in relation to the program being set up, you can quite properly make news.

Questions regarding city and regional planning, conservation, new building, real estate development, extension of town or city limits, and a number of other matters which, sooner or later, involve considerations of water supply not only invite comment but justify it. The value of such comment is that it creates the impression that you, as a representative of a vital community service, are aware of your civic responsibilities. This practice should not, however, be carried to excess, as the newspapers and the public get tired of a "news hog"—a person who tries to jump into the headlines with some comment on every issue before the community.

The wisest course is to select one or two questions on which you feel you can contribute good advice and to limit yourself to a few well timed public utterances. Of course, on certain issues of importance, you may be in the picture quite actively for days or even weeks; but, as far as possible, it is best to plan on only two or three major talks or statements a year.

Cashing in on 'Outside' News

In addition to creating news through comments on matters of local concern, you can also seize the opportunity to say something about issues and situations which are arousing state, regional, or national interest. Two considerations should always govern your actions: first, be sure to confine yourself to subjects you know something about; second, stress the local aspects of the picture. You are a servant of your particular community, and your objective in commenting on broader questions must always be to help the people of your community see how the big issue affects their interests and their home town. Your underlying purpose must be to help build up the water works and its management in the eyes of your own special public.

The most effective opportunities which arise are those resulting from some sweeping statement made at the regional or national level concerning questions of public health, public safety, conservation, community development, working conditions, civic improvements, housing, and the like. The moment such a statement receives general circulation—either through a release over the news wires or through a magazine article—a great many people in your community want to know how they are affected.

A conspicuous example of the manner in which this works has already been provided in the water works field. The September 1947 issue of *Woman's Home Companion* contained an article on stream pollution

under the sensational title "Foul—But You Drink It." Immediately water works men all over the country were flooded with inquiries about the situation as it applied locally, and some very interesting publicity resulted. Some was very good, some not so good, depending on the way the story was handled. But the incident points up the way in which a national question can have strong local repercussions.

All your opportunities may not be so dramatic as this, but, by keeping an eye on the big popular magazines and the national news in your local papers, you should from time to time find something to talk about. Be careful not to go rushing into print, however, until you are sure you know exactly what you want to say. Be certain you have the story straight before commenting on it. Read it through carefully several times. If it is a news story, check the way it is handled in several newspapers. If it is a digest of a speech or government release, check, if possible, with the original source to be sure that the facts are substantially correct. Above all, if you are made angry, wait until you have calmed down before calling in the reporters. Talk things over with your associates and make sure that your views represent a considered and appropriate opinion.

Using the 'Old Reliables'

There are several pictorial subjects which seem to be almost universal in their appeal to the readers of newspapers—pretty girls, cute children, animals, weather scenes. Perhaps you may not feel that these lend themselves to water works exploitation. The chances are, however, that, by cooperating with local newspaper photographers, you can make the news pages at least several times a year with attractive shots.

Hot weather scenes—such as a baby in a tub, children sporting on the lawn with a garden hose, a youngster giving his dog a drink of water—will nearly always be accepted by the papers during a warm spell. A little planning will provide an arrangement in which the caption writer works in a kind word for the water system.

If your reservoirs, aeration facilities, filter plants, or other installations possess any scenic beauty or landscaping—flowerbeds, lily ponds, flowering trees, or other natural attractions—you can often interest the news photographers in taking "pretty-girl" pictures when the flowers are at their best. Commercial photographers will also frequently be glad to use such settings for their own work—for fashion photographs and the like. Such publicity, of course, is rather indirect in its influence, but it adds just one more little weight to the scales, helps keep the water works in the public mind, and entails very little effort on your part.

Remember the 'VIP'

In searching out picture-taking opportunities, do not overlook the "Very Important People" who from time to time visit your community. These

may or may not have any direct interest in water works activities, but if you can arrange it so that they appear somewhere around your installations, be sure that a photographer is on the scene. Your success in this direction will depend upon two factors. First, does the water works have anything interesting to offer the visitor? Second, how successfully have you sold other public officials and civic leaders on the showplace value of the water works and its facilities?

If, as sometimes happens, you have a storage reservoir on the highest observation point in the immediate vicinity, with a commanding view, get reception committees in the habit of taking visitors there for a look around. Make your vantage point the Empire State Building of the town. Or, if you have developed attractive gardens or any other unusual features, sell the idea that they be included in the tour.

Take advantage, too, of the visits of important people in your own field. If distinguished engineers, water works executives from other cities, or other, similar visitors appear, get them photographed examining your installations. Such photos may not always make the news columns, but you will find that they very frequently will.

Planning and Advance Notice

The actual writing of a press release or the sending of a notice to the papers is perhaps the least important of all the steps that create interesting, printable news stories. The job must begin much earlier. This is one of the things which executives and firms unfamiliar with the publicity function so often do not realize. They frequently employ a publicity man or press agent only to discover that, to get any value out of his services, they must agree to undertake a number of activities they never anticipated.

Take the example given earlier—the party for an old employee. Planning several weeks in advance of the event is necessary to make it a success. The party must be organized, a suitable location secured, the proper guests invited, the cake baked and appropriately decorated, the assisting young lady selected and coached a bit, the press notified, and a dozen other details worked out in advance.

Make it a habit, therefore, to examine everything you plan—in your personnel relations, your school program, your contact with public officials, and your direct appearances before groups—and to look for its publicity value. In this connection, it would be well to maintain a future-events notebook, with each date marked approximately a month in advance of the actual happening—construction starts, anniversaries, appearances before public groups, personnel promotions and retirements. List everything that a little advance thought might convert into a source of valuable publicity.

When you go to the trouble to create an event or occurrence, let the press know before, not after. If the event has any news value at all, the press will want to cover it, not just hear about it through a report from

you later. This is particularly important if you hope to get pictures taken. If you use a press release, send copies out a day or so before, or, at the latest, hand them to the reporters during the occasion itself. Advance notice and planning go hand in hand toward securing good publicity.

The Feature Story

Despite the fact that the newspaper is primarily interested in events, a great many papers allocate a certain amount of space to a more descriptive type of article. Such articles are generally devoted to some subject in which the editors believe their readers will find interest—interesting people, interesting jobs, interesting places in the community, bits of local history. Often these articles are written in connection with something in the news. For example, the decision to tear down an old theater may prompt a writer to do a story on famous actors and actresses who appeared there during its history. Frequently, however, no such tie-in exists; a writer just happens to dig up an interesting set of facts about some person or thing in the community and organizes them in article form.

A newspaper will often have one writer who does nothing but prepare such features. Sometimes he presents them in a column published in each issue in a regular place; or they may appear among the regular news stories. Some papers distribute the feature assignments among their reporters and editors, others buy them from outsiders and free-lance writers. On a larger paper, feature writing is set up as a special operation under the direction of a feature editor. Many papers with a Sunday edition run a full section devoted to such material, while evening papers frequently devote considerable space to feature material on Saturday night, when there is little advertising and the paper is likely to be light.

Your first step, of course, is to find out how features are handled by your local papers and govern your own efforts accordingly. If you have a close association with the reporters who cover your office as part of their beat, the best way is to work through them. Sometimes they are encouraged to do features themselves and will naturally be most interested in cooperating with you. At any rate, they will know whom to put you in touch with and may even bring a feature writer around to see you.

The feature writer is usually searching for some special angle that will justify a story. Whether you have the cooperation of reporter friends or approach an editor or special writer through some other channel, you would do well to have in your own mind two or three possible pegs on which to hang the story. Usually feature writers for newspapers are most interested in people, or in conditions or things which have some pretty direct effect on the lives of people. If, therefore, you are hoping to arouse interest in a story on the water works operation as a whole, be prepared to show the writer, first of all, how the water supply affects everything that his readers do; then follow up with the mechanical and technical aspects.

Another approach is through a description of the jobs your employees do, the kind of experiences they face, the way they solve their problems, anything interesting about their personalities. Take a meter reader, for example. All day long he goes around the community, meeting all kinds of people, sometimes getting involved in completely unexpected situations. Suggest to the feature writer that he spend a day with a meter reader, sharing his ups and downs, getting him to recount some of his experiences.

If you have a house organ, take time to study the personalities and experience stories your own editor has written up. Have a file of the more interesting ones on hand when the feature writer arrives. Frequently he will get a lead that will develop into a bigger story addressed to a broader public. For that matter, if you have a good house organ editor on the job, he may find it possible to place some of the material himself. If he gets paid a few dollars, so much the better.

Having interested a writer in developing a feature story, make sure that every step is taken to facilitate his getting the facts, impressions, and pictures that he needs. Most newspapers employ considerable picture material in presenting a feature story, and the writer will generally work with a photographer. Feature writing involves a somewhat different approach on the writer's part than that called for in straight reporting. He must spend more time on the scene, do more talking with individual employees, and study more of the details in order to construct a lively and interesting feature. Be sure, therefore, that his way is made easy.

Give him as much briefing in advance as he feels necessary, help him schedule his own and his photographer's appointments so that they are at the right place at the right time. Assign a responsible staff member to accompany and advise him. See that passes and proper identification are provided, so that the writer and photographer can get where they want to without delay. Notify foremen, watchmen, and other personnel involved that the visit is scheduled. If pictures are to be taken or employees interviewed, give advance notice that your permission has been secured.

Do not arouse the interest of a feature story writer and then convert his enthusiasm into annoyance by neglecting to take care of routine procedures within your own organization. There are few things under heaven more exasperating than an earnest watchman stubbornly and conscientiously doing his duty because someone has failed to instruct him that an exception to the rules has been authorized!

Extending Your Influence Through Radio and Television

Time on the air, like space on the printed page, can be either purchased or secured through the application of publicity principles. This section deals only with the latter procedure. Although many communities that support daily newspapers do not have a local radio or television station,

the distribution of radio-TV facilities is so widespread that some observations on using them as a publicity device are in order. Practically all cities in the United States of more than 50,000 population—except certain suburban municipalities close to metropolitan centers—have at least one radio and TV station, and such stations are to be found in scores of considerably smaller places.

Many of the country's stations—small as well as large—are associated with the various national networks, so that a portion of their daily schedule consists of nationwide broadcasts. But all stations give some of their time to programs originating locally, and, wherever broadcasting or telecasting facilities exist, there likewise exists some opportunity to employ them to the advantage of the local water system.

In the News—On the Air

Your primary opportunity to secure mention on the air rests directly on your importance as a source of printed news. Radio-TV is second to the newspaper as a distributor of news. Although the former gives less attention to the details and leaves many minor items unreported, any news of general community interest gains its place promptly in the local news broadcasts and telecasts. A great number of stations are owned by newspapers, so that all important local news accumulated by reporters is sent directly into the pressroom of the radio-TV station. Where the station is owned by other interests, some arrangement is generally made for the similar quick receipt of items of local interest, along with general world, national, and regional news.

Many stations also employ local commentators who do for the immediate area what the famous ones do for national and world events—combine the recounting of the facts with interpretation and analysis. If you are making news of real importance you can be reasonably sure that it, too, will receive its share of comment and thus amplify the value of your news-making efforts. All considerations, therefore, which govern your development of publicity for the printed page will likewise affect the publicity you enjoy on the air. Building on that foundation becomes the next step.

Opportunities for Broadcasting

Part 2 (planned public relations) discussed the opportunities for addressing community groups. The enlargement of the audience by means of radio-TV frequently comes as a matter of course. In many smaller cities, where a great deal of original talent is not likely to be found, radio stations devote considerable time to the broadcasting of local public events. The practice is not limited to the smaller stations, but the larger and more important the city and station, the greater the competition for time and the more exacting the standards of what constitutes an interesting public occasion.

Here are some of the types of affairs which receive coverage in greater or lesser degree, depending upon station and community conditions:

1. Public dinners, usually the annual dinners of important trade and civic associations.

2. Weekly meetings of luncheon clubs, particularly if the club has a reputation for putting on good programs with interesting speakers.

3. Dedication ceremonies, inauguration of new civic facilities, and opening of new public services (a good chance to highlight an extension or improvement in water facilities).

4. Public hearings, town meetings, and other official assemblages of a public nature.

In addition, a second group of programs, generally arranged by the stations themselves, likewise depends for success upon the participation of speakers. Included in this group are the following:

1. "Public affairs" forums, sometimes organized as debates, sometimes as simple presentations of topics of public interest by qualified speakers. Question periods are often a feature.

2. "Know your government" and "know your city" programs, often aimed at school children, but generally with an adult appeal as well.

3. Interview programs, involving interesting or important personalities, sometimes handled in light vein, sometimes seriously. A great many stations have built up featured performers who specialize in this type of program.

4. Dramatizations of local history and important events of the past (offering an opportunity to put across the story of how the water works was developed).

Making the Most of Opportunities

In considering the use made of radio-TV opportunities, it would be well to reread the section on talks in Part 2. Much of what was said there applies with extra force here. First of all, the occasion and kind of program should be carefully studied. A talk on a "know your government" program would, quite logically, deal in straightforward fashion with a simple description of the water works and its functioning. On the other hand, if you are to appear at the annual dinner of the chamber of commerce, your address should definitely contain some significant contribution to the thinking of the community on civic affairs. It should rise above a mere discussion of water works policies and procedures. The only exception would be if a major issue affecting the water works—such as a proposed large-scale extension of facilities—happened to be before the public. Under such circumstances, a thorough review of the question would be in order. For the interview type of program, you might well take a completely different approach, discussing the human-interest side of the picture, telling something of what it means to be a water works man, recalling various unusual

or exciting incidents—experiences with floods, broken mains, construction difficulties, and the like. Each type of program offers its own special kind of opportunities, and it is necessary to think through—in advance—just how you will make the most of them. You will often find it helpful to discuss the situation with the station's program director or the announcer.

A manuscript is essential in practically all radio broadcast appearances. Make sure of the time at your disposal, and read your speech aloud several times before your appearance on the air to ascertain that you have timed it correctly and can read it smoothly. In television, the problem of visual aids is very important. Photographs, charts, models of buildings, filter plants, or pumping stations, and actual pieces of equipment such as valves or meters can all be useful. Films in the files of water works can also be employed advantageously by TV stations contemplating a program on municipal services.

In seeking opportunities to place the water works story on the air, you will find it helpful to think in broader terms than those which define your own sphere of interest. Look for opportunities to team up with other participants in organizing a series of programs with general public appeal. Take the "know your government" idea, for example. A radio-TV station which might show little interest in giving the water works time on the air would probably adopt an entirely different attitude toward a series which took up, program by program, the various functions of the municipal government. True, you would be sharing the air with the police, the firemen, the street cleaners, and the park department, but that is much better than not being on the air at all, and they are public servants just as you are.

A similar series might be developed with various civic groups on the subject, "A Good Town to Live in," covering governmental, industrial, commercial, and recreational aspects of the community. By raising the level of interest above that of any one organization, the programs take on a public service rather than a commercial aspect, and the radio or television station is more willing to carry them as a feature.

Professional Assistance

It is easy to see that, although publicity can be made to grow merely by keeping information flowing to the press, the more constructive aspects of the publicity job call for a good deal of planning and work. The ultimate responsibility for publicity rests with top management, and any publicity program calls for a considerable expenditure of time and activity by the men who count in the public eye, executives who occupy the administrative and policy-making positions. Even if a professional publicity man sets the stage, it is the top man who must go out and stand in the spotlight.

If you have just one paper to deal with, and a cooperative reporter or two to help, you can, in all probability, handle everything yourself without

undue sacrifice of time or energy. If you have a secretary, the handling of routine items like personnel notes can be cleared through her. In somewhat larger communities, you may have to assign someone to a more active share of the job. The suggestion has already been advanced that your employee publication editor could be of some assistance in preparing feature stories. A combination job could probably be created which would cover both the internal and external publicity function.

In communities of, say, 50,000 or more, it will probably pay you to have a full-time assistant working on the publicity details of the public relations program. If yours is a municipal department you may not be able, because of public policy, to identify such a person as a public relations director, but, whether he is classified as an assistant to the manager, an assistant personnel manager, a secretary, or whatever, his function should be well understood within the organization and by the press.

Sometimes, it is possible to employ a newspaper reporter in a part-time capacity as press representative. A good many reporters add to their traditionally modest salaries by such activities, and, although the practice is not exactly approved of by the newspapers, it is overlooked by many publishers. Care should be taken, however, to avoid any action which might appear designed to influence the reporter's integrity.

If conditions permit, you will, of course, find the services of a full-time, openly identified public relations assistant very valuable. But you must realize that he cannot get you news simply by sitting at a desk and making up stories out of his head. Although newspaper experience is valuable, and though you will expect him to maintain close working relations with the press, he must possess something more than the mere ability to write a news release. He must have the imagination and the planning capacity to envision happenings and make them occur, and you must extend your fullest cooperation in this phase of his work. The publicity will follow.

7. Employing Advertising's Versatile Devices

Advertising, traditionally, is associated with the development of business, the building of sales, and the waging of competition's battles for trade. Because the public utility is a monopoly, rendering a service which the whole community deems essential, there is a body of opinion which maintains that such organizations ought not to spend money for advertising. This view is likely to be held with particular fervor where the utility is a publicly owned agency. Why, the argument runs, should the municipal power plant or water works advertise any more than the fire department or the school system?

The last few years, however, have brought a growing utilization of the devices of advertising in the broader fields of public information and education. During the war advertising techniques were extensively employed to sell war bonds, encourage industrial production, recruit homefront workers, warn against spies and sabotage, fight inflation, urge food conservation, and aid scores of other wartime objectives. Many of those who had been most critical of the business community's use of advertising quickly employed advertising methods when it became necessary to secure widespread public understanding and support of vital wartime measures.

The value of the advertising approach rests in its directness. Publicity (see Part 6) presents the facts as filtered through the minds of reporters and editors; the importance given any piece of news depends upon many editorial considerations beyond your control. You can never be completely sure that the public will get the particular impression you hope to convey. With advertising, your message appears exactly as you want it to, it says just what you want it to say, and it focuses attention upon what you consider important. Moreover, advertising permits the introduction of emotional and imaginative elements and can make a straightforward appeal for support or action.

The well balanced public relations program employs advertising and publicity as a team, using the news columns to build up general interest and advertisements to concentrate this interest upon the firm, institution, or organization on whose behalf the program is functioning. Advertising can do some things more quickly and efficiently than publicity can, and many utilities, therefore, claim the right to call upon advertising's aid in telling their story to the public.

Looking over your own activities, you may well be aware of situations in which the use of a direct message would appear to be thoroughly justified. Fortunately, the devices of advertising are so numerous and so versatile that you may be able to employ some of them, even though the idea of advertising, as such, is frowned upon. They include not only the newspaper advertisement, the billboard, and the sponsored radio-TV program, but also the simple printed card, the bill enclosure, the message on a statement, the leaflet, the sales letter, and the booklet. You may have no promotional budget, but that lack need not prove too great a handicap; advertising thinking can give advertising value to many things you would be doing anyway.

Direct Mail and Related Advertising Forms

Direct mail—printed cards, leaflets, bill enclosures, statement imprints, stickers, letters, and booklets—offers advertising help which almost any water works executive can put to work effectively. Easiest to develop, easiest to use, easiest to justify, such material can often be employed when

newspaper advertising would create criticism and can be charged quite legitimately against any of several budget classifications, even if no allowance for promotional expenditures exists.

Giving a Simple Notice Promotional Value

Every water works, even a small one, has occasion to send informative notices to its customers from time to time. The difference between a mere notice and a promotional piece is in the point of view behind its production rather than in the printing cost incurred. Much can be done to dress up such material, but the basic point to remember is that even your simplest customer communication can, if properly prepared, be made an instrument in your drive for better public relations. All you have to bear in mind is one simple question: "How can I state this in a way that will make the people of this town aware of what their water works means to them and the good job we are doing?"

Consider, for example, what can be done with some simple notice—say, the announcement of summer sprinkling hours. You can, of course, confine yourself to the cold statement: "*Notice*—Water for lawn sprinkling shall be used only between the hours of 7 and 9 AM and 6 and 8 PM." Such a notice tells your customers the essential facts, and, in a sense, fulfills your obligation to them. But it is hardly calculated to "win friends and influence people."

Even a simple line of explanation can help; something like: "This regulation has been established to assure you and your neighbors a plentiful water supply all summer long." But such a statement is still pretty cold. How much better to think in terms of public relations values from the beginning! It takes only a few more words to make the identical announcement in a way that causes your customers to feel you are thinking about them. Consider this suggestion:

Green Lawns for You All Summer

> Regardless of the weather (and dry spells are pretty frequent in this area), you can count on green lawns all summer, thanks to water service. Get the most for your money—use water wisely. Experts say it's better to soak the soil to a depth of several inches once or twice a week than to give your grass a light sprinkling daily. They also suggest watering only in the cool hours of the day. As the heaviest demand on the water system in the summer comes in the late afternoon and early evening, water pressures will be lowest at that time, if the sprinkling load is added before 8 PM. Therefore, we have established the sprinkling hours after 8 PM and before 7 AM, when the heavy morning demand comes on.

Perhaps this does not have the legal force of the formal notice, but it is going to make a lot more people want to cooperate, and that is the impor-

tant thing. Here is another way of doing it, making use of AWWA's cheerful sprite, "Willing Water":

WILLING WATER SAYS—"Remember folks, I'm on the job, eager to keep your lawns green and fresh all summer. But let me remind you that the best time for sprinkling is early in the morning and in the evening, when the sun doesn't pull the moisture right out the minute you've put it in the ground. As the heaviest demand on the water system in the summer comes in the late afternoon and early evening, water pressures will be lowest at that time, if the sprinkling load is added before 8 PM. Therefore, we have established the sprinkling hours after 8 PM and before 7 AM, when the heavy morning demand comes on.

These represent just two of many ways of handling one situation. A number of others will come to mind. Here again the point lies not in exactly what you do, but in the thinking behind it. There are hundreds of ways of saying a thing, once you appreciate that it's worth saying.

Public Relations Value From Printed Forms

Almost every piece of paper that passes between you and the public can be converted into a device for building understanding and goodwill, on the "drops of water" principle: no one thing in itself may be particularly important, but, when you take them all together, you have a force of considerable potency. This applies not only to those to whom you sell, but also to those from whom you buy. You can do something not only with statements and bills, but also with purchase orders and payment vouchers. A phrase, a slogan, a brief paragraph, a cut of "Willing Water"—any of these can be worked effectively into the layout of your various forms at very little added expense. Do not forget service application forms. These are the first your customers encounter, so make a good initial impression.

The Public Service Commission of Halifax, N.S., for example, uses an appropriate "Willing Water" cartoon on each of its printed forms. As the sprite has been well publicized by the commission, it lets him do the whole job, unassisted by words. Water departments in other cities—Leavenworth, Kan., and Akron, Ohio, for example—use the character in connection with a brief message.

A number of subjects suggest themselves for such brief treatment. Here are a few: low cost of water (cost per delivered ton makes a good and startling point); safe water 24 hr a day; lower fire insurance rates because of dependable water service; new business for the community through dependable water supply and service; announcements of new facilities for improvement of service; requests for cooperation in avoiding water waste; suggestions to check plumbing and leaky faucets (a good opportunity to

give your friends, the plumbers, a boost); interesting water statistics (observance of anniversaries of service units or facilities, mention of important milestones in consumers served or gallonage provided). Others will come to mind. Stated briefly and pointedly, they not only add interest to conventional forms but also build up the desired favorable impression.

Winning Friends With Letters

In considering methods of informing and influencing the public, do not overlook the simple letter. A friendly, straightforward letter, unadorned by any of the embellishments associated with the word "advertising," can do a real job. In many situations, letters—particularly if they carry a ring of sincerity—can prove more effective than costly booklets or large ads.

Especially worth while is the welcome letter to a new customer. The mere fact that you recognize his existence induces a pleasant feeling, and an invitation to visit plants, reservoirs, and other installations, or a brief statement of basic policies and service standards, will create a lasting and favorable impression. Welcome letters should, if possible, be individually typed and personally signed. If the average does not run more than four or five a day, such a practice should overburden neither your stenographers nor you. Should the volume rise higher, one of the processed types of letters may be required, but care should be taken to get neat work and a highly accurate fill-in of name and address.

A variation of the welcome letter can also be prepared for the old customer who moves. Be sure, however, that the right letters go to the right customers—that the new customer is, in fact, new and that the change-of-address customer is one who has received prior service. Relations with long established customers can also be made the basis for letters. Letters noting and expressing appreciation for 20, 25, or 30 or more years of business make a pleasant impression and are well worth the effort involved in checking records.

Another letter worth sending is the "thank you" note to visitors who have signed the register at your plant or reservoir. This may be very simple—just an expression of appreciation for the visit and a sentence or so voicing the hope that the visitor found reason for confidence in what he saw. If your community is not too large, it will also pay to send an occasional letter of general interest to all your customers. A major improvement in your facilities or equipment might well justify such attention. Or, perhaps at the time your annual report is issued, such a letter might be employed to review its highlights. You could include an offer to send the full report to all interested citizens.

Of course, the same kind of material could be included with regular water bill mailings, but the separate letter possesses a rather special virtue. In their normal relations with utilities and municipalities, most people re-

ceive nothing in the way of mail except bills and collection letters. A letter which brings only a bit of interesting information has definite surprise value. People do not expect it and are consequently impressed.

You should not overlook the public relations value of any piece of correspondence which leaves your office. Answers to requests for information, answers to complaints, letters covering specific relations with individual customers, even collection letters can be worded in such a way that the addressee is impressed by the ideals of public service that govern the water works management. The secret lies in honestly trying to meet the point of view of the other fellow and in giving him grounds for wanting to meet yours.

Another means of using your correspondence in your public relations work is by postal meter advertising if you employ such a machine for your postage. In this, the "space" is free, and your only expense will be the cost of the slug and such artwork as may be necessary to set up your message. Although the postal meter ad cannot say very much, it is useful in putting across such messages as the need for conservation or the value of water service. And it is in a space where it is sure to be seen.*

Flexible and Effective—The Printed Bill Enclosure

Perhaps the most popular of all devices for reaching every customer on a regularly scheduled basis is the printed card or leaflet inserted with the water bill. It can be kept very simple or it can be dressed up with color and artwork. It can be handled lightly or in more serious vein. It can consist of a few brief paragraphs or proceed in a more leisurely, conversational style. A simple little four-page bulletin can be developed, covering several topics of consumer interest in each issue.

One of the principal appeals of the bill enclosure lies in the fact that the printing cost, which can be kept quite low, is the only investment involved. The bills are going into the mails anyway, and one stamp can be made to serve a double purpose. Another advantage arises from the regularity with which bills are sent out. You know your mailing dates well in advance and have time to plan material intelligently.

Indeed, it is quite possible to plan a whole year's series at one time and have the entire job printed at once. This saves a bit on the printing costs and assures you that your enclosures will be on hand as needed. If some special matter comes up that requires the preparation of an appropriate piece, you simply shift your material ahead and use the replaced enclosures at another time.

In discussing printed forms, some appropriate topics were mentioned. These are equally suitable for development in bill enclosures. Of course,

* AWWA has available several of these ads made up in slugs for use with the Pitney-Bowes meter.

with more space at your command, you can work them up at greater length. Other subjects—such as items of water works history, stories of unusual service rendered, accomplishments of personnel, discussions of major water works issues or future plans—can also be dealt with.*

Unless you have the benefit of experienced advice, play it safe in designing bill enclosures, as well as any other printed jobs. Keep them simple; use only one or two styles of type; avoid fancy lettering and trick ornaments; do not try to crowd too much into the space at your command. All printers, unfortunately, do not possess the highest standards of taste, and unless you are pretty sure of the craftsmanship of the one you are working with, better insist on simplicity.

Make sure, too, of the sizes of your enclosures. Prepare a blank paper "dummy" of the exact size you plan to use and be sure that it will slip easily into the envelopes you employ for bills. Check also on weight—have the printer give you samples of the stock he is going to use, cut to size. Weigh the sample together with the bill and envelope just to assure yourself that no added postage will be required.

On the More Ambitious Side

Although simple cards and leaflets, suitable for use as bill enclosures or for distribution in your office, may meet most of your needs, occasions may arise on which something a bit more ambitious is required—a booklet or brochure. A booklet which can be employed to good advantage is one on the subject, "Meet Your Water Works," designed primarily for presentation to new customers, but also suitable for distribution to plant visitors, audiences at talks, students, and other interested persons. Such a booklet can serve as a major public relations tool and should be made as interesting and attractive as circumstances permit. To be most effective, it should be of handy size, so that a man can carry it in his pocket and a woman in her handbag.

If possible, it should be primarily a picture book, with only enough text to fill in the background and tie the pictures together, and it should be printed on good paper, to bring out the full value of illustrations. It should enable the reader to get a pretty clear impression of how the water is gathered, processed, and distributed, without bogging him down in technicalities. It is the kind of job one of your local newspaper writers could probably help you put together, or you may find that your local printer offers such service to his customers. In larger cities, there are regular direct-mail advertising agencies which specialize in this type of work.

Such a book might be organized along these lines, although many variations can be suggested:

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* The AWWA pamphlet, *Your Water Supply*, a 12-page consumer's guide designed as an envelope stuffer, contains "how-to" information on reading meters, detecting leaks, replacing faucet washers, and saving water generally.

1. Word of greeting—the purpose of the book
2. Importance of water to the community and the individual
3. Where the water comes from
4. How it is gathered and made clean, safe, and usable
5. How it is checked in the laboratory
6. How it gets to the customer, how service is maintained
7. Explanation of costs—what the customer pays for, how water is metered and billed
8. A brief review of how the water system grew (this may also be covered immediately after Item 2)
9. Hints on water conservation, how to check on plumbing efficiency
10. What to do in an emergency.

If the book is used under varying circumstances, the greeting and explanation in Item 1 might have to be handled in several different ways. In such an event, it is better not to make it part of the book but to start out with Item 2. Then you could have different types of greetings printed on separate sheets and slip the appropriate one inside the front cover.

Booklets for Occasions

Important steps forward in the water system's development make logical occasions for the preparation of appropriate booklets. The completion of a new reservoir, tank, filter plant, or pumping station, or the installation of major mains, is an event of real consequence to the community and to your customers, and an explanation of its significance is a genuine public service. It is important to remember, in preparing material on such a subject, that the whole tone should reflect a desire to make people understand what the improvement means to them. Particularly where public funds have been employed, it is essential for the public to appreciate the reason for the expenditures. Stress the need that has been met rather than the size or technical excellence of the new facilities provided. Use such descriptions only to demonstrate how the improvement functions in the community's interest.

Notable anniversaries likewise justify preparation of special material. They offer a particularly appropriate excuse for reviewing the whole history of water service in the community and for driving home the reminder of what the town or city would be like without modern water service. Stories of early days, of early fire-fighting methods, of quaint and unusual devices employed in water procurement all give a colorful and entertaining background against which the modern picture can be projected. Anniversary booklets also provide occasion for paying tribute to the civic leaders, municipal executives, and others who, through the years, have worked to give the community the modern water service it enjoys. Such commendations are always desirable because, even though many of those concerned

are no longer alive, their descendants are frequently active in local affairs and the recognition is appreciated.

In this connection, a word might be said about the maintenance of a log of water works progress. One of the biggest jobs in preparing any historical sketch—particularly of business organizations—is digging up the essential data. It is amazing how quickly important facts become hazy in people's minds and how successfully old records hide themselves away in the vaults. By keeping a master log in one book or file and noting important developments as they occur, a handy record is always available. Such a running history need not be overly elaborate—nothing comparable to the annual report—but, merely by serving as a sort of perpetual index, it can prove consistently valuable.

Other Products of the Printing Press

The whole range of printed items used at one time or another as advertising or promotional devices is far too extensive to discuss at length.* Principal attention has been given to those which the average water works executive will find it easiest to employ, but a brief review of some others may also suggest ideas:

1. *Calendars.* Calendars may strike you as an overworked device, but a good calendar is always welcome in home and office, and it works for you the year round. A wide variety of calendar blanks can be purchased from specialists in this field. They can then be imprinted with various types of messages in accordance with your desires. One appropriate calendar might be built around seasonal messages on water use and conservation. For example, January might carry a warning against freezing pipes, April might deal with spring cleaning, and June might discuss wise lawn sprinkling.

2. *Blotters.* Blotters are often used as bill enclosures. Your printer can buy the blanks and imprint them with the material you furnish. One treatment often used is to provide a monthly calendar on the top, together with the message. This gives greater usefulness to the blotter, makes people look at it more often, and keeps your message before them. Blotters lend themselves to the reproduction of attractive photographs. As they have a longer life than the average piece of printed matter, the value of anything you say or show increases correspondingly. The idea of messages keyed to the seasons, already noted in connection with calendars, can also be used with blotter-calendars.

3. *Posters.* Posters for use in your own office or show window, in the schools, in plumbers' windows, in building equipment stores, and elsewhere provide an effective means for getting over simple messages quickly. They are particularly helpful in presenting a single idea which can be stated in a few words, such as: "Visit Your Water Works" or "Check Water Pipes

* A catalog of promotional devices available from AWWA can be obtained on request.

Now." They are not so effective when the message is long or involved. Mention has already been made, in the school program study (Part 5), of employing prize-winning posters prepared by school children for this purpose. As a public relations stunt, this is a good idea, but, for extensive use, professionally prepared material is usually to be preferred. Various problems in reproduction are involved which the amateur does not often understand. If the message is all text, without artwork, your local printer can probably give you what you want at an economical price. If artwork in different colors is involved, you will find that the silk screen process is probably the least costly, particularly for small runs.

4. *Gummed stickers.* Another device for getting over a brief message is the gummed sticker. By using one or two bright colors, stickers can be given considerable display value, and they do much to liven up letters, printed forms, and envelopes. If you have a beauty spot in your system, a sticker reproducing a photograph of the scene makes an interesting addition to the mail you send out. The photographic sticker also provides an inexpensive method for publicizing a new installation. Of course, a word or two of identifying text should be supplied.

Advertising in Newspapers and Local Periodicals

Newspaper advertising is a public relations device which is denied to many water utilities, particularly those operating as an agency of government. Nevertheless, it is well to have an understanding of how such advertising can be employed, and a brief review of the subject belongs in any comprehensive discussion of public relations practices.

Utilities usually employ newspaper advertising for three purposes:

1. To make a specific announcement of importance to the general public
2. To sell appliances or support the sale of appliances by local dealers
3. To do an overall public relations job—to sell the community on the character, efficiency, and public responsibility of the sponsoring utility.

Of these three uses of advertising, the first is most easily justified, regardless of such questions as the desirability or even legality of the employment of paid advertising by public utilities. Advertisements of this character are practically the same as public notices and belong in the newspapers as a matter of public service. Appliance-selling advertising is a device which many utilities, particularly in the gas and electric field, have adopted as a compromise measure. Arguing that appliance sales mean greater consumption and that greater consumption leads to lower unit rates, they hold that such advertising is in the public interest. If, at the same time, it sells the utility institutionally, that is merely a fortunate coincidence. The third use is self-explanatory. Here advertising is employed quite candidly as another public relations tool, telling the story of what the utility is—how it functions, how it serves the public—and claiming, either by inference or

by direct statement, that it is doing a good and conscientious job in the public interest.

As the appliance factor is not a major one in the development of water service, your chief concern will be with the first and third uses of advertising. The ideal setup is one which permits the use of both in combination, so that your public notices and your institutional material appear as part of one harmonious campaign. Because this may not be possible, however, these two types of advertising will be discussed separately.

Public Notice Advertising

Public notice advertising is a type which most water works executives may find occasion to use. The subject matter is, of course, limited by the range of announcements which may be considered of sufficient public importance to justify such expenditure, and will be pretty factual in content. But there is no reason why you cannot apply some of the same kind of thinking already referred to in the discussion of printed notices. Although the excuse for the advertisement may be an announcement of legal consequence, it can be converted into something more human and appealing by the choice of words employed.

Even if you do nothing more than give a simply worded explanation, you will have done much to convert your notice into a public relations instrument. And if you can explain the matter in terms of the public's interest and the community's gain, you will have progressed far toward creating a true advertisement. If you possibly can, take enough newspaper space to give public notice advertisements display value. Try to avoid the typical legal notice, with its mass of fine type jammed into a single column. Lawyers read such items because they are used to doing so, but the general public avoids them. If legal restrictions do not prevent you, buy added space, use wide margins all around your text, and let people know that you want them to see your message. Try to amplify your headline so that it gives the reader some clue to the subject matter of the text. Give him something besides the word "Notice" as an invitation to read further.

If you have frequent occasion to use such announcements, it would be desirable to prepare a special border design, ornamental device, or signature treatment which would always serve to identify water works notices. The "Willing Water" cuts provided by AWWA are excellent for this purpose, as they add a light touch without interfering with the seriousness of your statement. Or, if there is objection to the light touch in such advertisements, some more conventional design—such as a fountain or waterfall—would make an appropriate symbol.

Institutional Advertising

As has already been observed, true public relations advertising may be unavailable to you, but a number of publicly owned water works have found

ENERGETIC cities do not stand still. They grow in population and industrial capacity . . . and stature. So has Indianapolis grown in the past 30 years. The population in the area served by the public water supply increased from 330,000 in 1922 to 490,000 in 1952—about 50% more people.

But in those same three decades, the water used jumped from 29,600,000 gallons per day to 59,160,000 gallons—100% more water!

However, White River and Fall Creek—chief sources of water supply for Indianapolis—did not increase their stream flow correspondingly to care for the added demand. Rather, in several years of subnormal rainfall, the flow of water in those streams dropped to dangerously low levels.

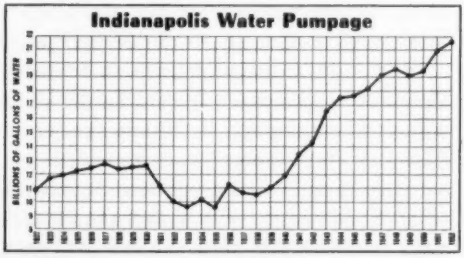
Daily water demands that have been as high as 93,000,000 gallons (June, 1953) cannot be met with stream flows that have dropped—and could again—as low as 23,000,000 gallons on White River and 4,500,000 gallons on Fall Creek . . . stream flows of less than one-third of the water needed!

To make up this difference, the company has many wells, but it must also store water to meet demands during periods of low stream flow.

In 1943, the Indianapolis Water Company completed Geist Reservoir on Fall Creek. Its 6,900,000,000 gallons of stored water have maintained normal stream flow in Fall Creek, thus enabling the company to meet the increased demands during the days of World War II and immediately thereafter.

But one reservoir is not enough. Today your water company is preparing a similar huge reserve supply of water—Morse Reservoir on Cicero Creek, a tributary of White River. Scheduled for completion in 1955, it will provide an adequate flow of water in White River to care for increased demands.

Both reservoirs are part of a far-sighted program developed 30 years ago when the Indianapolis Water Company foresaw that the city would grow, but the rivers would not.



Water pumpage tells the story of city growth as well as the trend of the times. Completed meterization in 1932 lessened water waste; the depression further lowered pumpage; industrial activity incidental to World War II greatly increased water usage; and the current National Defense Program, industrial expansion, and population growth, plus a boom in air conditioning, have resulted in a constantly increasing demand for water.

Indianapolis Water Company

One of a Prize-winning Series

ways to justify its employment, and, even though it may be denied you now, a turn in circumstances may make it available at some later date. To be effective, public relations or institutional advertising should possess consistency, both in its theme and in its scheduling. Ads should appear with reasonable regularity and should have sufficient similarity in design and argument to create a cumulative effect.

You should think in terms not of individual advertisements, but of a program. Most advertisers faced with similar problems generally work according to a master plan extending over periods of 6 months to a year. This does not mean that every advertisement must be prepared prior to the beginning of the program or that advantage cannot be taken of such favorable developments as may appear after the plan has been adopted. Rather it provides an overall point of view which should govern the treatment of news that develops, as well as the more permanent elements in the picture.

Exactly what you do depends upon such a variety of local factors that no precise plan can be laid out for you in any general discussion. A few program themes can be suggested, however, just to start you thinking:

1. "How We Serve You." A step-by-step series along the familiar lines frequently discussed in these studies: where the water comes from; how it is gathered, prepared for consumption, and safeguarded; how it is distributed; how service is maintained; how meters are read, billing handled, and collections made.

2. "What Water Service Means to You." Water in the home, for fire protection, for clean streets, for parks, in laundries, in our industries.

3. "Neighbors of Yours Who Keep Water Service Functioning." A human interest series: the pumping station engineer, the filter plant operator, the street repairman, the laboratory technician, the meter reader, the billing clerk.

4. "Water Is Precious." A "contrast" series, showing how hard it is for some people to get water compared with how easily and cheaply your customers obtain theirs: the village fountain in Mexico, the roof collection system in Bermuda, the water vendor in North Africa.

Hints on Planning Advertising

In organizing an advertising program, your first consideration must be its objectives. What do you want your advertising to do for you? Do you want to make people conscious of the efficiency of the water works, the constructive civic attitude of the management, the relatively low cost of water service, or what? Granted that your overall objective is to improve public relations, what specific chores do you feel advertising can handle most effectively?

Second, how much money do you have to spend? Third, how much does newspaper space cost in your community? These two questions go hand in hand. The size of your advertisements and the frequency with

which they appear are both dependent upon the relation between funds available and costs of space. Newspaper space is measured and billed on two bases. On most daily newspapers, the basis is the column-line; on many weeklies, the column-inch is employed. All papers use one or the other. A column-line is a slice of space $\frac{1}{14}$ in. in depth and a column's width across. An advertisement one column wide and 1 in. deep is a fourteen-line advertisement, an ad 5 in. deep and one column wide is a 70-line advertisement. An ad designated as 70×2 is one which measures 70 lines deep and runs across two columns; it therefore occupies 140 lines of space. If you are not familiar with such measurements, the wisest course is to have the business manager or advertising salesman of your local paper rule off various areas of space and mark their sizes and costs upon them. Thus, you can visualize what your money will buy.

If your community has several papers, you are, as head of a utility in the service of the whole public, almost compelled to place your ads in all of them. In that event, the computing of the various amounts involved becomes a bit more complicated. The easiest way is to total the rates for the several papers and figure as though you were dealing with one super-paper having the combined rate.

An important question which always arises is the relative value of a number of small ads versus a few big ones. How you answer this will depend upon the style of advertising adopted, but it seems safe to suggest that, so long as you can present at least one subject a month, the bigger and more comprehensive your institutional ads, the better the job they will do.

One more item should be mentioned in connection with budget thinking. You will have some costs in addition to actual space charges. Make allowances for art, photography, engraving, and other preparatory expenses. Your papers will set type without charge, but the selection of type they offer is usually rather limited, and their printers are likely to be too rushed to provide careful work. To secure more distinctive type treatments, many advertisers pay typographers to do this work. You may not feel this to be necessary, but, even without this expense item, you should allow at least 5 per cent of your total budget for preparatory costs. A $10,000 budget would, accordingly, allow $9,500 for actual space and $500 for preparatory costs.

Filling the Space

With the general theme determined, and the space allocated, the actual task of preparing the advertising still lies ahead. The responsibility moves from the realm of general executive decision to the specific duties of the craftsman—the writer, artist, and layout man. If it is at all possible, call in professional help. Many newspapers maintain service departments which undertake this work for local advertisers. Or, if your community

is a city of 50,000 population or more, chances are that it contains at least one advertising agency. As the agency is paid a commission by the papers on the space purchased and charges only a modest additional commission on artwork, plates, and the like, you can secure the benefit of skilled service for very little more than you would pay handling everything yourself. Probably your total cost will be less, because the agency will know how to do many things in ways which will save you money.

Of course, if yours is a larger organization, you will find that it pays to employ an experienced advertising man as a member of your staff. In municipal water departments, there may be no allocation for such a staff member, but, as was mentioned in the discussion of professional publicity assistance, some staff categories may be sufficiently broad in definition to include the talents of an advertising assistant, if not the title. In a medium-size organization, it is often practical to combine the jobs of employee magazine editor, publicity assistant, and advertising manager into one position. This sounds a bit complicated, but, in practice, it works out quite satisfactorily, as a great deal of the work is interdependent.

Should you find yourself in a position where you must prepare advertising without the benefit of professional assistance, here are a few points to remember:

1. Work closely with your local paper. Make sure of the facilities it has available. Study the styles of type it has to offer. Many of the smart-looking advertisements which you may admire require a lot of work beyond the capacities of your local printer.

2. Keep your advertisements simple. Do not use fancy arrangements of type. It takes a sure and experienced eye to employ them successfully. Allow for broad margins—let white space set off your message.

3. Most smaller newspapers are not prepared to handle photographic illustrations satisfactorily. If you use artwork, it is safer to rely on line drawings. The "Willing Water" cuts furnished by AWWA are particularly effective for this purpose.

4. You will find it worth while to have an identifying border and a special rendering of the utility's name prepared. If you do not have talent in your own community to produce the proper designs and lettering, your newspaper's business manager will doubtless know of some organization in a nearby city which can prepare this material for you. The initial cost may strike you as being rather high, but, once secured, these simple devices do much to lend a feeling of continuity to your advertising.

5. Write simply. Use a headline which states the theme in terms of the reader's self-interest. Make liberal use of the words, "you" and "yours."

6. Adopt a theme and keep to it for at least 6 months—provided, of course, that no development arises which gives good reason for change. Do not change simply because you are getting bored with your basic idea.

About the time you are getting thoroughly weary of your theme, the public is just beginning to be aware of what you are driving at.

7. Do not try to tell everything in every ad. Divide your basic story into points, hit one point in each message, and show how that point illustrates or proves the major idea you are seeking to get across.

A Brief Review of Other Advertising Channels

Most of the uses of radio and television available to you as a water works executive have already been listed in Part 6 (publicity). Radio and television live exclusively by the sale of time, however, and thus are even more dependent upon advertising than are the newspapers. If you are using advertising, you will probably find yourself, sooner or later, involved in a consideration of the merits of radio-TV. Most such advertising falls into three categories:

1. The sponsored program, in which the advertiser is identified with the entertainment offered and usually pays not only for the time but also for the talent employed.

2. The participation program, in which a group of advertisers of noncompeting products or services all get mentions in the course of a single show. Most of the "good morning," "couple at breakfast," and women's feature programs are in this classification.

3. The "spot" announcement, in which the advertiser's message is delivered after the end of one program and before the beginning of the next.

The spot announcement is usually the least expensive, but the time on the air is so brief that only the simplest messages can be conveyed. It is used primarily to keep a brand name constantly before the public and is not suitable for institutional use. Participation shows might, under some conditions, prove a possibility, but generally they have such a "huckster" atmosphere that their value to an organization which is not actively selling something is questionable.

Normally, if you are considering radio or television, it will be in connection with the sponsorship of some local program. Selection of the particular program to be identified with the water works is a matter calling for considerable taste and judgment. The show should have broad community appeal, it should be above reproach in its content, and it should not be silly. At the same time it should have entertainment value. Light concert music is always safe, but it is not particularly compelling as an attention getter. Dramatizations of local history and the like are effective when well done, but they require good scripts, good direction, and good actors. These are available in only a few major cities. Quiz shows—say, on local events, for high school students—might prove interesting, but here again an expert quizmaster's touch is necessary. Perhaps the most suitable of the easily available programs are news roundups, especially if

local news is featured. They always have a following and are appropriate in character for your sponsorship.

Probably the most attractive of all opportunities available to the local sponsor are those presented by the broadcasting of local sports events—baseball, football, basketball, and the like. The time charge for these may be relatively high because they consume a much longer period on the air than does the usual set program, but they are of wide public interest, and sponsorship acquires a connotation of public service. This, of course, makes it logical to remind the audience how everything the water works does contributes to the public interest.

The Special Radio-TV Appeal

There is one further use for radio-TV which may be secured for nothing or may involve the purchase of time, depending on conditions. From time to time you may have occasion to present an issue or an important fact directly to the people. A proposal for a large bond issue might occasion such an appeal, or it might prove necessary to go on the air to dissipate a state of public alarm.

The attitude of your local radio-TV stations concerning such broadcasts will vary with the situation. If you are speaking on a noncontroversial matter of serious community concern, the time will doubtless be contributed as a public service. If, however, the issue is controversial and, particularly, if different pressure groups are demanding air time, the stations may take the same attitude they do in political campaigns and sell available periods on an equitable basis to the various groups involved. In either event, make it a matter of policy to use the air for special broadcasts only when the matter is of paramount importance. Such broadcasts require a rescheduling of regular programs, a condition which listeners resent unless they feel the occasion and the message are of compensating significance.

Billboards and Car Cards

Billboards and car cards provide channels for getting wider distribution of the kind of advertising discussed in the section on posters. They are devices which lend themselves to the picture and the one-point statement. They call for eye appeal and brevity.

You pay separately, as a rule, for two things when you use these types of advertising—the printed material employed and the space utilized. All billboards in a community are generally controlled by one or two companies, which sell space on a monthly basis and set up schedules in a variety of ways. Car cards or bus cards are under the control of specialized organizations which hold franchises from the transportation companies. Car cards are also sold on a monthly basis.

York, Pa.

Massillon, Ohio

The 'Shipshape' Look—Modern or Traditional

Unless you are doing a very big advertising job, your interest in both billboards and car cards will probably be limited. One special opportunity may arise, however, and you may be able to take advantage of it. Interestingly enough, this is a situation in which the publicly owned water works has the better of it. Car card organizations dislike very much having blank spaces show up in cars and buses. They make a habit of donating unsold space to noncontroversial public causes and charities. The user has only to provide the cards. If yours is a publicly owned service and you are seeking wider distribution for a message of public interest—water conservation is particularly appropriate—you will find it worth while to investigate the opportunity gratuitous car card advertising offers.

The Best Advertising of All

Advertising takes so many forms that it would require scores and scores of pages to discuss them all, but there is one form which every expert in the field values above all else. All the devices so far discussed are only substitutes for it. That form is "word-of-mouth" advertising. When Mr. Jones tells Mr. Smith, "I wouldn't trade my auto for any other make in the world," Mr. Smith is impressed as he will never be by anything the car's manufacturer puts in the magazines.

Advertising is only a means to an end. Its purpose is to reach inside people, to make them think and feel favorably disposed, not toward the advertising, but toward the goods or the services or the philosophy of management it proclaims. Whatever you do, whatever devices you employ, whatever words or pictures or type faces you use, never lose sight of the main objective—to get through to the people.

8. Making the Water Works Interesting and Attractive

The average citizen wants to be proud of his community. He looks to his community leaders, both in government and business, to provide him with the substance on which that emotional satisfaction will grow. In particular, he looks to them to provide those physical manifestations of civic importance which can be seen and admired—quite literally, he wants installations and structures to which he can point with pride.

This emphasis on the appearance of the community, can, of course, sometimes make the average citizen the dupe of those who regard public office as an institution conveniently created for the enlargement of private fortunes. Gratification of the public's desire for impressive boulevards and stately buildings has more than once brought costs far beyond the value

of the facilities provided. And a fine physical plant does not necessarily indicate that the services it shelters are worthy of their setting.

Nevertheless, the citizen's desire for civic facilities and structures which will reflect credit on the community is a legitimate and healthy one. All of us live by symbols to some degree, and the community which testifies to its civic ideals through well kept streets, attractive parks, and dignified municipal buildings sets a standard to which its people respond.

Such response is particularly important to the public reputation enjoyed by the water works, whether privately or publicly owned. You will do well, therefore, to examine all means available for making the water works itself a fitting symbol of the service it renders.

Dressing up the Water Works

Regardless of how small your operation or how limited your budget may be, there is one essential step which you can take. You can maintain the highest standards of neatness, order, and cleanliness in all equipment, plants, and offices. Such standards, of course, bespeak good management in all fields of business, but they possess special importance in water works.

The one thing your customers expect, above all else, is what they call pure water, even though you know what they really mean is safe water. The symbol of purity to most people is cleanliness, and they judge cleanliness by neatness and order. The more shipshape the water works, the more confidence the public will have in the character of your operation. No matter how good a job you and your staff are doing, no matter how carefully you are protecting your community's water supply, the average citizen is bound to be a little dubious when his eyes fall upon evidences of sloppy "housekeeping." This subject has already been touched on briefly in Part 3 (employee relations), but it deserves repetition here. Just as order and cleanliness inspire pride in the worker, so do they instill confidence in the public. Do not forget, in this connection, that the one logical place for a continuing demonstration of the cleansing power of water is in the water works itself. Sparkling windows, well scrubbed floors, and spotless walls in offices, plants, and laboratories should prove a constant reminder to public and personnel alike that cleanliness and water are old and close friends. Certainly, no water works man should expose himself to witticisms about not using the stuff he sells.

The Power of the Paint Brush

Paint can be a highly effective public relations tool. Used frequently, and with an eye for effects, it renders important service in maintaining a good impression upon the public mind. It is most desirable to select a standard color scheme for all equipment and installations seen by the man in the street. The advantages of such a step are obvious. If every evi-

dence of the water system's functioning carries the same identification, the cumulative impression of activity and service is correspondingly intensified.

If, for example, street barriers, toolboxes, trucks, and trailers are all painted yellow and blue, the average citizen will soon come to associate that particular color combination with the water works and will become increasingly aware of how big a part water service plays in the functioning of the community. Of course, certain considerations, such as conditions of use, will affect the selection of designs. But even where other colors are required, the distinguishing color or combination can be employed as a band or panel on equipment or installations. For example, a long board fence might be an eyesore if painted in bright identifying colors. But a band of the proper hue could be run along top and bottom.

Attractively painted interiors should also bear witness to the overall standards of neatness and cleanliness which prevail. In general, colors should be light and fresh. They should not appear to be concealing dirt, but they need not be a uniformly cold white. A wide range of suitable pale tints are available, and a touch of cheerfulness can be achieved by using brighter and bolder colors as trim.

Whatever your ideas on color, the one important thing to remember about paint is that it does not maintain its attractiveness forever. Make it a matter of policy to do a certain amount of repainting every year. This applies with particular force if you employ bright colors or bold designs. The more eye catching they are, the shabbier they look as they become weather-beaten. Paint can do a public relations job for you, but you must keep doing a job with the paint brush to achieve results.

Halifax, N.S.

Symbols and Messages

Although distinctive color schemes can do much to secure identification, this can be further aided by the use of appropriate symbols, like "Willing Water," on trucks, street barriers, and other pieces of equipment. Slogans or pertinent messages can also be employed with effective results. Street barriers, for example, can be converted into something more than

just an obstruction to traffic by displaying such message as: "This work necessary to give Hometown better water service" or "Sorry to inconvenience you, but this job must be done to maintain water service." Service trucks could appropriately display a line such as: "Water Service—On the Job 24 Hours Every Day"; other suggestions will undoubtedly come to mind.

The important thing, as stressed throughout this study, is the point of view that governs your thinking on these matters. If you consider everything the water system uses a potential symbol of what the water works stands for, you will find many ways of giving it an identifiable importance in the eyes of your fellow citizens and customers.

Plant Beautification

The step from maintenance of order and smartness to a more ambitious projection of the water works into the public consciousness may be beyond your resources. So many water systems have made such interesting progress in this direction, however, that you may well have greater opportunities at hand than you now realize.

Water is the one commodity in general use, the gathering and processing of which can create beauty as a byproduct. Reservoirs cause tree-bordered lakes to appear in landscapes not naturally endowed with such attractions. Certain water treatment operations—notably aeration processes—possess an eye appeal approaching the spectacular. And even where these features are lacking, the mechanics of water distribution usually require that treatment plants be located on the edge of the community where grass and trees can provide a parklike setting.

The mere preservation of neatness and order calls for certain basic attention to plant surroundings. Neatly mowed lawns, well maintained walks and roads, properly trimmed trees and shrubbery—these are the marks of good water works management, quite apart from the public relations factors involved. A minimum of labor, guided by a bit of imagination, can often highlight such attractive settings with a touch of beauty that will yield public attention out of all proportion to the effort involved.

Start With Flowers

To the urban dweller, the relation between attractive flowers and the water system is a rather important one. His garden hose is the magic wand that permits him to possess a handsome yard and garden regardless of nature's whims. A display of flowers in and around the water works is, therefore, highly appropriate. Moreover, it need not involve any more work than the personnel of the particular plant will themselves be interested in contributing.

Almost any use of flowers will add to the interest which people show in your plant. Floral borders along your walks, flowerbeds in the middle

of your lawns, and floral paintings along building walls will all evoke interest. To secure the utmost public relations benefits, however, it would be well to give thought to the development of something a bit special—something which would make people go out of their way to pay a visit to the water works floral display. A water lily pool, for example, might be particularly appropriate; water lilies are flowers which many people are not in a position to grow, and a handsome display would attract many visitors.

Another effective use of flowers is a mass planting of some one species. A quarter-acre carpet of zinnias—familiar as these summer annuals are—can create a glowing tapestry which will bring visitors from far and near. Or you might concentrate on the early flowering shrubs and trees of spring. Washington's cherry trees bring visitors from all over the United States; on a local scale, you might make the water works a comparable center of interest. Or you might try a rock garden. Rock gardens are particularly appropriate for the bases of dams, where the sides of the stream frequently offer an appropriate setting.

If yours is a municipal department, you may find it possible to establish a working relationship with the park department, securing plantings and service from the greenhouses which it maintains.

Water as a Decorative Element

In considering plant beautification programs, do not forget that water, itself, constitutes a decorative element dear to landscape architects. Try, if possible, to introduce water into your beautification projects. Create a reflecting pool, even if only a small one, or set up a simple fountain. Perhaps the character of your grounds would invite the simulation of a small natural stream, crossed by footbridges and bordered by paths and appropriate floral plantings. Waterfalls also add a touch of the picturesque.

If these suggestions sound like too much of a challenge to the facilities and budget at your command, remember that comparatively simple undertakings can often yield highly effective results. Many times your regular employees will take pleasure in working on such projects as a hobby, and the necessary equipment and supplies are frequently available in your own storerooms. As for the water, that should not be too hard to obtain, under the circumstances!

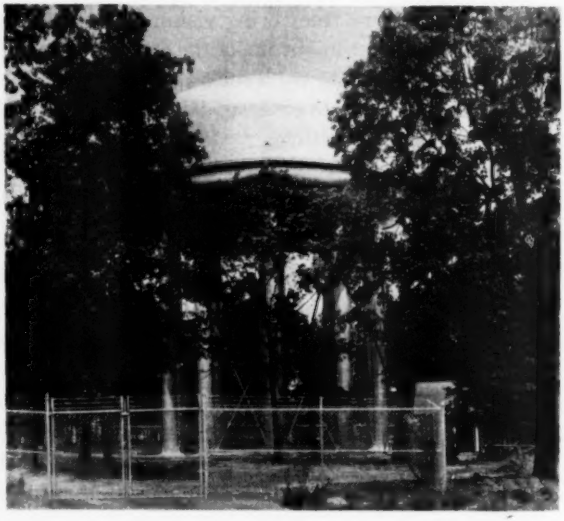
One note of warning, however, should be voiced. If you do display to the public any decorative water elements, make sure that they are kept clean! Pools and fountains defeat their purpose when they become repositories for stray debris.

Concealing Ugliness

Beautification of plant is as much concerned with concealing ugliness as it is with augmenting the attractive. Although neatness and order will do much to overcome the unpleasant impression created by structures and

equipment unattractive to the eye, their concealment is often esthetically desirable. Despite the fact that the water works operation can produce actual beauty, certain aspects of the water works plant are not particularly beautiful. Of course, definitions of beauty vary widely; to the engineer, a design which approaches functional perfection may appear quite handsome, while evoking no admiration whatever from his wife. From the public relations point of view, however, the general standard of the community should receive major consideration.

An example of this is provided by the elevated storage tank. Often essential to the functioning of the water system, it is not universally regarded as a thing of loveliness by everyone in the community. This feeling is likely to prevail with special force when it becomes necessary to construct such a facility in a better-class residential area. Special consideration should, therefore, be given to the color used, and, if feasible, a wooden plot should be selected, so that the surrounding trees screen the structure as much as possible. Hedges and rows of closely planted trees should also be employed to screen less sightly aspects of your operation, particularly if they are in close juxtaposition to residential and other non-industrial areas.



Norwood, Mass.

Engineering and Architecture

The preceding discussion has dealt with what can be done using what you already have. Usually the structures which make up the water plant are a heritage from previous regimes, and there is not much you can do about their fundamental design or construction. As communities grow and change, however, new plants and buildings are required from time to time, and chances are that, somewhere along the line, you will share the responsibility for determining the style, proportion, and architectural effect of new buildings.

Your primary obligation, of course, is to secure an efficiently functioning engineering installation. But you likewise owe it to your community to consider the effect which the architectural package designed for that installation will have on the appearance of the immediate neighborhood. Do not be guided by the engineer's viewpoint alone. Bring in a capable architect and invite him to survey the surrounding community, studying both its present character and its probable development. Impress upon him the importance of giving your installation an appearance which will remain good through the years.

Include effective landscaping in your plans right from the beginning. It is much easier to provide for an attractive setting in the planning stage than after the finished building has been erected in the wrong place.

Reservoirs and Watershed Areas

In many parts of the country, the water system's impounding reservoir is the nearest thing to a lake offered by the adjacent countryside, and it is often a point of interest regularly visited by Sunday and after-dinner motorists. With its surrounding plantings and its expanse of water, it constitutes a beauty spot which will always be attractive to visitors.

The extent to which you can make your artificial lake available for recreational purposes will depend upon many factors, including the various laws which have been enacted to safeguard public health. From the public relations point of view, it would seem most desirable to permit some use of reservoirs which serve simply as storage basins for raw water being held for full treatment later on. Psychologically, such use should probably not extend to swimming or boating. People who will swim upstream a short distance and never give the matter a second thought will suddenly be shocked at swimming in the same water once it is impounded, regardless of how much treatment is to follow. The case against boating rests on the always present possibility of an accident.

No unpleasant associations are inspired by fishing, however, and regulations should be as few and simple as the circumstances permit. Some form of registration is probably desirable, in order to check on the number of people on the property and to be sure of conformity with state license laws. Of course, if yours is a very large community, or a small community close to a large city, stricter controls will be required.

Recreational use of controlled watersheds can also be permitted under certain regulations, again depending upon the laws in force, the nature of your system, and the processing which the water receives. Although you might feel it desirable to limit such privileges to responsible groups and individuals, such as the boy and girl scouts, school classes, nature study groups, and the like, it is good public relations policy to be as liberal as circumstances permit.

Even where conditions do not permit the opening of beauty spots to general public use, however, you can, with proper safeguards, make it easy for people to derive greater enjoyment from their beauty. Too often, all the public gets is a quick glimpse from the highway through the surrounding trees. It is usually possible to provide at least a parking strip at some strategically located point from which people can take in the view comfortably. Or a simple pavilion can be constructed, offering a commanding outlook to those willing to get out of their cars and walk a few feet or climb a few steps.

Extending a Welcome

The further you can go in making people feel welcome as water works visitors, the more effective your public relations efforts will become. If you have sufficient land, provide a public picnic area. Or, if you control some pleasant vantage point overlooking the community, you might construct a pavilion with refreshment facilities, leased to a responsible concessionaire.

In any event, make it easy for people to see and appreciate what you want them to look at. Provide walks and promenades properly laid out in relation to points of interest. If a particular operation can best be understood from above, construct an elevated walk or viewing gallery. And remember to place benches at convenient intervals. Sightseeing is a tiring business, and your visitors will appreciate facilities for relaxing as well as looking.

Seeing is believing. The whole purpose of your efforts to make the water works interesting and attractive is to persuade people to come and see for themselves what their water works is, what it does, and how well it does it.

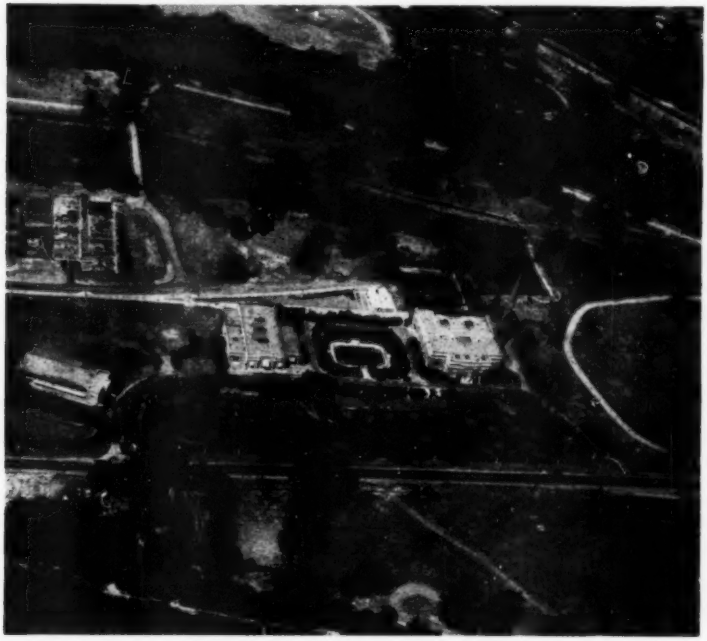
Telling Your Story

In making water works plants and other installations an attraction for visitors, do not overlook the purpose behind your welcome. Make sure that they know what they are seeing and how it fits into the overall functioning of the water system. Erect neat signs, suggesting the order in which visitors should tour the plant. Provide similar signs at each point of interest, naming the thing they are looking at and explaining briefly what it is and, if necessary, what it does. Try to avoid technical phrasing; try, also, to explain things in terms of the average citizen's interest. If you are dealing in large figures, provide a comparison in terms of human experience. With regard to the capacity of a reservoir, for example, you might say: "Enough water to fill every bathtub in Hometown once a day for six months."

Under certain circumstances, it might prove worth while to have an explanatory recording made, and use it with a turntable and loudspeaker.

Every time a group of visitors has gathered, the watchman or engineer on duty would merely have to start the record going. Thus, a regular lecture service would be provided without taking any of your personnel from their jobs.

One more thing: if certain areas or installations must be closed to the public for practical reasons, have your signs say so politely and with a word of explanation. Do not welcome visitors with one hand and throw blunt "Keep Out" notices at them with the other.



Water Works Park, Des Moines, Iowa

Des Moines Proves It Can Be Done

That a water works, and a municipal water works at that, can provide the community with a spectacular beauty spot is proved in emphatic fashion by the Des Moines, Iowa, system. Other water utilities have provided landscaped grounds, gardens, lagoons, and picnic areas, but Des Moines has combined all these features—and more—into one highly effective park and playground.

Des Moines' supply is procured partly through a system of galleries adjoining the Raccoon River. This method of water collection has made necessary the acquisition of 1.400 acres of river front land immediately adjoining the plant site. Moreover, the situation of the plant itself required

considerable excavation and levee work to provide protection against floods and to maintain proper elevation with respect to the gallery collecting system. Taking advantage of these conditions, the Des Moines system has for years carried forward a beautification program which has made its Water Works Park one of Iowa's showplaces.

On the plant grounds, the Des Moines Water Works presents a goldfish pool, a lagoon, and a handsome formal garden. The lagoon displays lovely water lilies and is bordered by decorative plantings. The pool, kept warm the year round by water heated in the pumping station, boasts goldfish of spectacular size and beauty. For the most part, the water supply grounds have been kept in a natural state, with bridle, bicycle, and footpaths inviting the visitor to explore their attractions. The area has been declared a game refuge and attracts students and nature lovers in large numbers; feeding trays are provided when snow is on the ground, and quail shelters have been arranged.

Certain areas within the grounds have been further developed to provide picnic facilities, with tables and outdoor stoves, and a log cabin which serves as a shelter house is used constantly by picknickers. Of special interest is the crabtree planting. The superintendent of the grounds has developed an area containing 250 rare species of crabapples. The collection has become world famous and thousands of people visit the park every spring in blossom time.

A 200-acre impounding reservoir has been stocked with game fish and is open to public fishing. The lake has become noted as a rest area for wildfowl, and Des Moines residents have formed the habit of driving out from town to observe the thousands of ducks that alight there.

Special events also add to the public's interest in the plant and its adjoining recreational area. Of these, one of the most successful was a flower show, worked out in conjunction with the garden clubs of the community. Widely used and enjoyed, the Des Moines project is proof, not only that such undertakings can be successfully carried through, but also that they actually build public appreciation for the water works and its management.

The Office as a Public Relations Factor

A water system, by its nature, is a widespread operation. Interesting as plants and reservoirs may be, they are usually off the beaten track for the average citizen. The office of the water department or company is, on the other hand, usually located in the heart of the business and shopping district. People are constantly coming and going, and more are always passing by. In your public relations thinking, you will find it worth while to consider methods for making full use of this strategically located "show window."

Municipal water department offices are often housed within the city hall or some other municipal building and thus lose their identity, so far as street traffic is concerned. Nevertheless, they remain a focal point of contact with the public—with new customers, in to sign their contracts, and with old customers, in to pay their bills. Obviously, if you are spending time, energy, and, perhaps, money to reach people with the water works story, you will want to take advantage of those moments when they come to you.

Few offices are so small that something cannot be done in the way of visual education. Fundamental neatness and cleanliness are basic—that factor has already been dealt with. The next step is to give people something to look at and talk about.

Pictures—At Least

The simplest displays, probably, are arrangements of photographs. These can be handled as individually framed prints on the walls or presented on a swinging exhibit easel. More dramatically, they can be converted into large photo murals, to serve not only as illustrations depicting the water system but also as decorative panels.

To be effective, however, photographs should be truly informative. The exterior view of a pumping station, for example, is not likely to have much appeal to anyone's imagination. Photographs will do the best job if arranged in logical sequence, tracing the water from its source to the faucet. Moreover, each picture in the arrangement should be accompanied by a neat identifying label, sufficiently detailed to give the reader some understanding of its meaning to the whole water works operation.

An interesting variation is one which provides for changing photographs every few months or so. Thus, the regular caller at the office is given something new to look at from time to time. Very simple display arrangements can be made, using two wall strips and removable glass plates. Or you can secure an exhibit panel, such as is used in art and camera shows, and arrange mounted, but unframed, prints on either side.

With a changing photographic exhibit, you can present a variety of subjects—the detailed operation of each unit in the water system, water in the home, water in fire fighting, water in industry, and so forth. Procurement of photographs should not prove too difficult. You can encourage amateurs in your own organization to shoot appropriate subjects, or you can get much of the work done at little cost by cooperating with local newspaper photographers. Still another resource would be camera clubs in your community. Such groups generally include enthusiasts for different types of subjects, and among them you will doubtless find individuals who would welcome the chance to make sequences along the desired lines.

If you want to get the utmost in public relations value out of pictures, hold a prize contest for the best submitted by local photographers. Offer

a modest cash prize or two, with display of all entries. Secure a qualified expert or group of experts to judge the event, and see that the whole undertaking gets adequate publicity. Categories can be set up, if desired, for professionals and semiprofessionals, amateurs, and children. That means more winners' names and bigger news stories.

Posters, Diagrams, and Charts

Further diversification can be secured by using wall, easel, and exhibit panel space for the display of posters, diagrams, maps, and charts. If, for example, you sponsor a poster contest in the schools, the logical place to exhibit the entries—at least, those which receive prizes and mentions—is in the water works office. Such an exhibition has a special value: it brings into the office many people who have no immediate business there and would not otherwise appear.

Diagrams, maps, and charts showing how the water works operates—how it gathers, treats, safeguards, and distributes water—can also be displayed to advantage. Such exhibits can be made permanent elements in the wall decorations of the office or can be handled as changing displays. In general, the advantage lies with the latter. After visitors have seen the same thing several times, they tend to take it for granted. If they are stimulated to look afresh every time they come in, they are more likely to feel that the water works office is always an interesting place.

Diagrams and similar devices can often be effectively used in conjunction with photographs. The pictures show what the subject looks like, while the diagram indicates its functioning or relation to the overall operation.

Working Models and Exhibits

Most effective of all office displays are actual working models of equipment. A filter plant model would provide an interesting and informative display, as would a model showing how a tank gives even water pressure. Still another working display—and one of particular interest to the consumer—could dramatize the amount of water wasted by a leaky faucet. Or, in place of models, continuous movies or slide films could be employed.

A number of scientific and semiscientific exhibits—covering such subjects as pollution, simple water chemistry, hardness factors, and the like—could also be devised. Some might be of the type used in big industrial exhibits, where pressing a button sets some demonstration under way. This might be applied, for example, to a working model of a pump.

Ideas for simple experimental displays could doubtless be secured from the science teachers of your local school system. In fact, you should be able to awaken their interest to the point where the production of models and exhibits could be assigned to the schools as projects in the science

courses. Or, you may find that your own organization includes men who would take on model building as a hobby.

Many items of equipment which are as simple as children's playthings to you may strike the layman as highly mysterious mechanisms. You could build an interesting exhibit around the working of a water faucet or a fire hydrant. Models encased in transparent plastic or with cutaway sides would provide a display sure to attract attention.

Through the Plate Glass

If you have your own office building or occupy street floor space, your opportunity for developing the show value of the water works office is

Office Window Display, Sharon, Pa.

broadened appreciably. With display windows facing directly on the sidewalk, you can keep attention focused on your activities from one end of the year to the other.

Practically all the suggestions advanced for enlivening the office interior can be utilized to create interesting window displays. You can use photos, posters, diagrams, working models, and every other type of exhibit. But you can go considerably further. Because a show window invites the display of material interesting to the passerby, you can extend your activities to a degree that might not seem completely justified for interior displays.

You can work up scenic treatments, even to the extent of showing a dam with running water or a flower-surrounded pool. You can have a little fountain playing or provide a glimpse of a stream flowing through the woods. You can make your window one of those which passersby always stop to inspect. In fact, you could hardly wish for a better frame of mind than that which prompts the question, "What are they showing in the water works window this week?"

Even if such ambitious displays seem beyond your resources, you can always attract attention with a display of plants and flowers. As already noted, the relation between water service and attractive gardens is an important one; as an example of what water, properly used, helps make possible, floral displays are highly appropriate for the water works office. In a smaller community, you might go a step further and arrange for floral showings by the local garden club or by individual gardeners. In fact, you could develop a regular annual water works flower show and make quite an event of it.

Extending a Cooperative Hand

If you have strategically placed windows or an office large enough to encourage display setups, or both, you can win friends by extending cooperation to various community groups seeking to place displays before the public. Your ability to make such cooperative gestures will depend upon the size of the community, the diversity of interests represented, and, if yours is a municipal department, the attitude of the local administration. Obviously, decisions on such matters must be guided by definite policies; you simply cannot give a window to one group and refuse the privilege to another without a definite and well established reason.

But you will secure one further attention-building device if you can set up a fair procedure for allocating window and interior space to community groups of the type that merit and receive widespread public support—the boy and girl scouts, the community chest organization, the hospital building fund, the Red Cross, the chamber of commerce, and many others. Moreover, you will profit by the variety these uses give your windows. Few window displays hold major public interest for more than 10–14 days; to possess maximum public relations value, your windows should be changed at least twice a month and probably oftener. Although an interior display, seen less frequently, may remain interesting for several months, a much speedier turnover is required to attract street traffic.

You will also be justified in granting display facilities to groups and organizations with a direct interest in or value to the water works. Sportsmen's clubs, with their interest in stream pollution control; garden clubs; city and county planning associations; and important customers, such as water-using industries, belong in this category. So do the plumbers and the water-using city departments.

If you have two or more display windows, you could make it a set practice to contribute one to other people's activities exclusively, scheduling as many as 52 displays a year. One advantage of such a system is that you would benefit from a continual change in window displays with very little effort on your part, as you would make the actual setting up of the display the responsibility of the particular interests desiring it. Of course, you should reserve the right of censorship, even though it would seldom need to be exercised.

Taking the Water Works to the People

Having developed models and exhibits which explain the water works and its functioning to the public, you need not depend solely on the people who come to your plants or office for an audience. You can also take your displays to the public in a number of different ways.

One method worth exploring is participation in certain types of shows and fairs. Many communities in the course of a year have several such events, and they usually command wide interest. Particularly worth while from your point of view is the "home show," devoted to home building, landscaping, and furnishing. Obviously, here is an excellent opportunity to reach the public in their role as customers. You can provide an exhibit which not only illustrates how the water system operates but also shows the homeowner and prospective home buyer a number of things he should know about water supply. You can demonstrate leak control, cold-weather precautions, and the most efficient placing of pipes, faucets, and other facilities. You can show how to check plumbing lines for danger spots and can otherwise render a valuable public service. In setting up such an exhibit, you might make an arrangement with the master plumbers of the community, inviting them to assist in the operation of your booth and help with the explanations.

Another activity in which you could logically participate would be the flower show. Here you might arrange demonstrations of proper watering methods for different types of plants, shrubs, and lawns. At the same time you could include an exhibit of some of your own growing things, along with a model or display telling the story of the water works as a whole.

At the sportsmen's show, emphasis could be placed on recreational use of watershed areas, control of stream pollution, and similar subjects of interest to the spectators. Other opportunities will present themselves, but, of course, budget considerations will play an important part in determining how far you carry such a participation program. Any public health show or display, however, should certainly merit your attention. And, if your community plays host to a county fair, you might find it worth while to be represented there.

In considering the value of such events, do not overlook the publicity which often accrues as a byproduct. They are generally covered in considerable detail by the press, and an attractive and interesting exhibit will often be photographed and described in the news stories.

Cooperation With Savings Banks

Turning to more permanent display opportunities, consideration should be given to local savings banks and savings and loan associations. These institutions are particularly interested in fostering home ownership, remodeling, and building, as their earnings are largely dependent upon mortgage loans. Savings banks and associations are always looking for ways of dramatizing their services and attracting homeowners and other prospects into their offices. The tieup between the water works and the home is a logical one, as already noted. If you can prepare an interesting exhibit —one truly helpful to the homeowner—you may well find that your local savings institutions will gladly make use of it. Although principal emphasis should be on the practical things the homeowner wants and needs to know, you can also bring in enough about the water works to sell the system and its operations.

Display for Plumbers

Plumbing shops are not conspicuous for the interest or attractiveness of their show windows. By providing an interesting and informative window display which could be rotated among the community's plumbers, you not only would gain a wider audience for your material but should also win the thanks of the plumbing trade. As a matter of fact, you might develop several such displays, covering different subjects, and keep them on the move.

A series of four might be constructed—the first, a model of the water system as a whole; the second, a working model of a filter plant; the third, a model of a house showing proper installation of water facilities; and the fourth, a leak demonstration model, showing wastage caused by leaks of various sizes. If models are too expensive for your budget, a series of displays could be worked out using charts and photographs, mounted, perhaps, on neat screens. You need not confine yourself to four subjects—eight or ten could be developed—providing a more detailed description of the system and more information on water use and conservation.

If there are a number of plumbers involved, someone should be made responsible for keeping track of the displays, moving them on schedule, and checking their condition.

Cooperation With Appliance Dealers

Although the plumber merits special attention—after all, he is your chief aid in maintaining satisfactory water service—you may also want to

consider working with all dealers handling any type of water-using appliances or equipment. Hardware stores, building supply dealers, appliance retailers, department stores, and various types of contractors constitute a group which, in greater or lesser degree, has an interest in the ultimate delivery and utilization of your product. In this connection, do not overlook the gas appliance firms and the installers of heating plants. They provide the means for heating water, and, as every water works man knows, hot-water problems are frequently a source of annoyance and concern.

If you are in position to create special display units for various classifications of equipment, it would be most desirable to do so. If, for example, a show window panel covering proper sprinkling methods could be devised, it would be particularly useful to hardware stores in conjunction with their displays of garden hose, nozzles, and related supplies. A display showing how water reacts under varying temperatures would appeal to the heating appliance dealers. And so on, through the various categories.

At the same time some of your more general displays would also be interesting to the various dealers, as long as some logical tieup with their trade and field of business existed. It would, of course, be essential to survey the various trade groups and check on their receptivity to such material before making any investment in signs, picture panels, or models, but the matter certainly seems to be worth exploring.

Other Logical Display Locations

Still another group of potential users of your displays consists of local insurance offices. Water supply is one of the essential factors influencing fire insurance rates, and several appropriate displays could be arranged—one demonstrating pressure maintenance, another covering the reserves of water available for emergency use, a third showing hydrant operation and what happens when the fire bell sounds.

If your local chamber of commerce is an active one, maintaining an information and promotion office, one or more exhibits could be prepared for display there. As representatives of concerns considering the community as an industrial location generally get in touch with the chamber of commerce, a display showing the relation of the water system to community stability, to fire protection, and to manufacturing processes would be most pertinent.

Along the same line, consideration should be given to participation in any general displays set up by business interests to sell the community to the visitor. Typical is the group of small-size show windows installed in the Indianapolis, Ind., Union Station, providing a quick introduction to the city's industries and business firms. Appropriately, the Indianapolis Water Co. is represented.

Preparing Exhibits and Displays

Obviously, it is one thing to agree that a display would be a good idea and quite another to design and build effective display elements. Relatively simple jobs, however, can often produce very attractive effects. One of the simplest arrangements is the three-panel screen, with a large central panel, flanked by two smaller sections which open out and which keep the whole display standing upright. Photographs, maps, charts, drawings, and appropriate titles can be mounted neatly and a very pleasing arrangement achieved without professional assistance. The screens can be built by almost any carpenter or amateur craftsman, using strips of wood and heavy bristol board, beaverboard, or light plywood. Kept freshly painted, they can be used over and over. One advantage is that, when closed, the material is protected and a compact package created; this is particularly desirable for a display which is transported from place to place.

A modification of this idea calls for treating the central panel as a shallow box, equipped with doors. When placed on end, with the doors open, the effect of a three-panel screen is again created. But space has been provided for the attachment of actual pieces of equipment or apparatus, or even models, to the inside wall of the box and to the inside of the doors. This type, too, can be shipped from place to place with maximum ease and a minimum of risk to the display material.

If there is an advertising agency in town, it will have resources for securing exhibits and displays of all kinds. If not, most communities have at least one sign painter who can handle simple jobs. Or you can, perhaps, interest high school classes—arts, crafts, and science—in working on your displays as a project. And do not forget your own employees—chances are you have more than one real craftsman in your plants and shops who would welcome a chance to display his skill and ingenuity, if you will provide the materials and give credit for the accomplishment.

'Silent Service' Reprints

In preparation are reprints of the AWWA public relations study, "Silent Service Is Not Enough!" including not only the material published in this issue of the JOURNAL but also an appendix of facts, statistics, and ideas (largely taken from *Willing Water* No. 25, December 1953) which can be usefully incorporated in talks on water works subjects. Reprints will be available in February 1955, at a price of $1.50 per copy (less 20 per cent to members paying in advance).

1954 Conference—Seattle

NEVER before have so many worked so hard to make so many so happy as at Seattle, Wash., last May 23–28. The happy many, of course, were the record 2,063 who registered to make the seventy-fourth conference the biggest ever—and the hard-working many were the Pacific-Northwesterners who served en masse to make it the best ever. Not content with offering a full quota of technical sessions and meetings, an unparalleled exhibit of water works equipment and material, and exciting entertainment every evening, the local section went all out to make sure that all AWWA not only saw but sightsaw Seattle and the surrounding country, with courtesy car tours during the conference week and four postconference tours—to Bremerton, Wash., to Victoria, B.C., to Seattle's Cedar River watershed, and even to Alaska. Only the failure to set up a Committee on Good Weather prevented the week from being absolutely perfect, but the dampness and chill never penetrated to the enthusiasm, and both Mount Rainier and the Olympics did "come out" to complete the setting.

Hardworker-in-Chief was Seattle's Roy Morse, chairman of a Convention Management Committee that included:

Representing AWWA	*Representing WSWMA*
W. A. KUNIGK	T. T. QUIGLEY
FRED MERRYFIELD	E. A. SIGWORTH

Ex Officio

M. B. CUNNINGHAM, *President*
HARRY E. JORDAN, *Secretary*
RICHARD HAZEN, *Chm., Publication Com.*
R. S. RANKIN, *President*
JOHN G. STEWART, *Manager*

The arrangement of Seattle's meeting rooms made it desirable for Dick Hazen and his program committee to experiment with a program of single sessions to permit everyone to attend every technical meeting. Although the week wasn't quite long enough for that, the committee did work out a schedule of ten regular sessions, during which 67 scheduled speakers and a hundred or more nonscheduled ones managed to cover all the major concerns of the industry. The formal papers presented, almost all of which have already been published in the JOURNAL, are listed on pages 1329–30.

Supervising the "show," meanwhile, were John Stewart and his Exhibit Committee, with 150 booths set up in more than 14,000 sq ft of arena right below the meeting rooms in the Civic Auditorium. There it was that water workers spent their time before, after, and between meetings, buying or sighing over the wares displayed by 90 of the field's leading manufacturers.

On the entertainment front, it was Tom Quigley again who took charge, ably assisted by Fred Shanaman, Brian Shera, Clare Parks, Trumbull Smith, Fred Merryfield, the Bob Jacksons, Arthur Musgrave, and Cliff Casad, respon-

1954 CONFERENCE STATISTICS

Seattle Registration by Days

Day	Men	Ladies	Total
Sunday, May 23	929	349	1,278
Monday, May 24	435	152	587
Tuesday, May 25	120	26	146
Wednesday, May 26	32	—	32
Thursday, May 27	20	—	20
TOTALS	1,536	527	2,063

Geographic Distribution of Registrants

UNITED STATES & TERRITORIES

Alabama	20	Maine	11	Texas	46
Alaska	6	Maryland	13	Utah	15
Arizona	8	Massachusetts	13	Virginia	6
Arkansas	6	Michigan	41	Washington	426
California	267	Minnesota	21	West Virginia	4
Canal Zone	1	Mississippi	4	Wisconsin	45
Colorado	29	Missouri	44	Wyoming	3
Connecticut	8	Montana	12		
Dist. Columbia	5	Nebraska	16		
Florida	15	New Jersey	85		
Georgia	19	New Mexico	1		
Hawaii	4	New York	135		
Idaho	24	North Carolina	18		
Illinois	101	North Dakota	8		
Indiana	42	Ohio	29		
Iowa	28	Oklahoma	13		
Kansas	27	Oregon	167		
Kentucky	21	Pennsylvania	101		
Louisiana	19	Rhode Island	14		
		South Carolina	10		
		South Dakota	22		
		Tennessee	15		

CANADA

Alberta	1
British Columbia	42
Manitoba	1
Ontario	29
Quebec	1

FOREIGN

Australia	1
TOTAL	2,063

Comparative Registration Totals—1946–1954

Year	Place	Men	Ladies	Total
1954	Seattle	1,536	527	2,063
1953	Grand Rapids	1,532	365	1,897
1952	Kansas City	1,600	386	1,986
1951	Miami	1,415	491	1,906
1950	Philadelphia	1,678	329	2,007
1949	Chicago	1,593	374	1,967
1948	Atlantic City	1,348	356	1,704
1947	San Francisco	1,115	431	1,546
1946	St. Louis	1,303	214	1,517

Win, Place & Show in Section Awards

Henshaw Cup		Hill Cup		Old Oaken Bucket	
Pacific Northwest	**67.5%**	**Southwest**	**50.51**	**California**	**1,056**
California	62.3%	Pacific Northwest	18.80	Southwest	915
Rocky Mountain	60.3%	Southeastern	17.83	New York	738

sible for the individual events. And the events were many, beginning with a sellout "Potlatch" buffet on Sunday evening, before the regular meeting-and-greeting affair, and continuing through the award night and President's reception, a "Klondike Kickup" of Gay Nineties getup and go, a starlight cruise around Seattle, the annual banquet and ball, and then the various sightseeing tours that kept some people busy for a week after the Conference had closed. As for the ladies, all record-breaking 527 of them, their days were just as busy as the men's, keeping up with the round of pleasure outlined for them by Dick Wolff, Beth Morse, and their committee of zealous wives.

At his best again in getting them there and getting them back was that demon despatcher Sig Sigworth and his crew, who had worked out a grand tour for both comers and goers to make the very most of the trip. And on hand to greet and take care of them during their stay were Jerry Allen and his hosts. Altogether more than 200 of the section's members, and friends and families as well, worked hard—and most successfully—at making Seattle's the biggest and best AWWA Conference ever.

Association Awards

Honorary Membership was conferred upon Ben S. Morrow, of Portland, Ore.; Samuel F. Newkirk Jr., of Elizabeth, N.J.; and Leonard N. Thompson, of St. Paul, Minn. The citations follow:

BEN STOGDEN MORROW, Engineer and General Manager, Bureau of Water Works, Portland, Ore.: *genuinely beloved throughout the Pacific Northwest; loyal member of the Association since 1926; Director 1932–35; received the Fuller Award in 1940; served on several committees and at the present time is a member of the Committee on Watershed Protection and Erosion Control.*

SAMUEL FRANK NEWKIRK JR., Engineer and Superintendent, Board of Water Commissioners, Elizabeth, N.J.: *a distinguished citizen of his community, who has served the Association well for many years; President 1945; Vice-President 1944; Director 1938–41; awarded the Diven Medal in 1942 and the Fuller Award in 1943; active in committee work throughout the years and outstandingly so in his leadership of the Meter Committee, during which time the very fine series of five meter specifications was promulgated.*

LEONARD NEWTON THOMPSON, Engineer and General Manager, Water Department, St. Paul, Minn.: *a valuable member of the Association since 1929; President 1946; Vice-President 1945; Director 1936–39 and again elected Director by the Minnesota Section for the 1954–57 term; presently serving as Secretary-Treasurer of the Minnesota Section; received the Fuller Award in 1949; served on numerous committees and participated in the divisional activities of the Association.*

The John M. Diven Medal, awarded to the member whose services to the water works field during the preceding year are deemed most outstanding, was presented to William J. Orchard. The citation follows:

WILLIAM JOHN ORCHARD, Director, Wallace and Tiernan Inc., Newark, N.J.: *in recognition of his many years of devotion to the Association and to the water supply industry; for his remarkable discretion, bold approach, and inspiring enthusiasm in the promotion of its broadening objectives; for his genius as a person, which has endeared him to his associates and promoted so much goodwill and understanding between the producers and consumers in the water supply field.*

The John M. Goodell Award, granted for the best paper published in the JOURNAL from November 1952 through October 1953, was conferred upon Michael J. Taras. The citation follows:

MICHAEL J. TARAS, Research Sanitary Chemist, Department of Water Supply, Detroit, Mich.: *for his paper entitled "Effect of Free Residual Chlorination on Nitrogen Compounds in Water," which was published in the January 1953 issue of the Journal* (Vol. 45, page 47). *This paper is a report on fundamental research at Detroit on the effect of chlorine on specific chemical compounds, with special reference to surface waters subject to sewage pollution and to ground waters. The paper is a valuable addition to the understanding of the chlorination process so important to the water works industry. It is the fourth report of similar studies by this author to appear in the Journal in recent years. Two of these were prepared by him alone and two jointly with his associate, Douglas Feben.*

The George Warren Fuller Awards were presented to 27 men whose Sections had nominated them in the year beginning with the 1953 Annual Conference at Grand Rapids and ending with the opening of the 1954 Annual Conference at Seattle. The awards—which are conferred for "distinguished service in the water supply field and in commemoration of the sound engineering skill, the brilliant diplomatic talent, and the constructive leadership of men in the Association which characterized the life of George Warren Fuller"—went to the following men:

Arizona Section—JOHN ANDREW CAROLLO: an engineer recognized throughout the Southwest for ability and courage, a firm and able supporter of improved public health; loyal, conscientious worker for the Arizona Section.

California Section—WALTER OTTO WEIGHT: for his untiring and ever cheerful service to the Association and Section, particularly his productive membership promotion activities and his work in organizing the superintendents and operators of the many smaller communities and water companies in Southern California.

Canadian Section—ALLAN USILL SANDERSON: for his effective water works administration in the city of Toronto, combined with long and meritorious support of the Canadian Section.

Chesapeake Section—EDWIN ALOYSIUS SCHMITT: for his outstanding service in the development of the Washington Aqueduct Water Supply Systems and improvements to the Dalecarlia and McMillan Water Purification Plants; and

for his untiring activities in the advancement of the technical programs of the Association.

Cuban Section—JESUS MARIA VALDES ROIG: for his outstanding contribution to the water works industry, and especially his brilliant work on the Santiago Water Works, as well as for his untiring efforts in behalf of the Cuban Section.

Florida Section—S. KEITH KELLER: for his energetic service as Chairman and Secretary-Treasurer of the Florida Section and, more outstanding, his lifetime of devoted service to his community as General Superintendent of the Pinellas County Water System.

Illinois Section—WILFORD WILLIS DEBERARD: for his leadership in the work of the Illinois Section; his constructive guidance and inspiration to the younger men of the Association; his accomplishments as a water works administrator; and his accurate reporting of the work of others.

Indiana Section—RALPH BENJAMIN WILEY: for his distinguished service as an educator in developing sanitary engineering curricula and sponsoring short courses and engineering conferences of great value to the water works industry; for leadership in civic affairs; and for the inspiring example of his forceful personality.

Iowa Section—ROY ORLAND ELLIS: for his unselfish and inspiring devotion to the Section and the advancement of its interests, particularly through his numerous and constructive committee activities and his noteworthy services in the various offices of the Section.

Kansas Section—DWIGHT FOX METZLER: for his devotion to, and work for, better public water supplies for the citizens of Kansas; for his excellent leadership and untiring efforts during the flood disaster of 1951; and for his enthusiastic promotion of the welfare of the Kansas Section.

Kentucky-Tennessee Section—WILLIAM HENRY LOVEJOY: for his leadership in Section affairs since its organization; for his technical contributions to the field of water purification; and for his outstanding service for nearly half a century in the treatment of Ohio River water at Louisville.

Michigan Section—EARL EDWARD NORMAN: for his efficient and capable direction of the expansion and operation of his city's water supply and for his deep interest in, and devotion to, the activities and the growth of the Michigan Section.

Minnesota Section—EDGAR WILLIAM JOHNSON: for his many years of faithful and effective service to the Section, and in recognition of contributions to his community and to his profession through his constructive leadership in the water works field.

Missouri Section—HERBERT O. HARTUNG: for his outstanding contributions to the improvement of the professional standing of water works operators and to the improvement of water treatment practices, particularly through his many years of purposeful service with the St. Louis County Water Company; and for his participation in the sectional and national activities of the Association.

Montana Section—MORRIS EDWARD HENDERSON: for his outstanding service as a water works manager, and in recognition of his valuable contributions to the Section as an officer and member.

Nebraska Section—JOHN WESLEY CRAMER: for his honest, efficient, and successful designing and building of modern water works systems; and for his unselfish and untiring efforts in behalf of the Association and its Sections.

New England Section—ROGER WILLIAM ESTY: for his many years of exemplary management of the water works of a New England town; for his earnest efforts on behalf of the superintendents of small water supply systems; and for his active participation in the affairs of the Association.

New Jersey Section—MARTIN ERNEST FLENTJE: for his thirty years of noteworthy service in the fields of water chemistry and water treatment and his efficient services in the activities of this Section, especially as Chairman of its Program Committee.

New York Section—ROBERT WILLIAM AUSTIN: for his long-time enthusiastic efforts in successfully promoting membership in, and advancing the ideals of, the Association, particularly among the water works operators in smaller communities.

North Carolina Section—WADE GILLIES BROWN: for his outstanding service as teacher in operators' schools, special training of operators for other communities, and cooperation with the Public Health School in the instruction of students of Pan-American and other countries.

Ohio Section—ARVINE ALTON ULRICH: for his constant devotion to the advancement of the Ohio Section; his many years of committee work; his outstanding service in all offices; and his contribution to the water works profession as an engineer and administrator.

Pacific Northwest Section—RAY EMERSON KOON: for long and important service in the planning and improvement of water supply systems throughout the Pacific Northwest, and in tribute to his personal qualities of capability, thoroughness, and integrity.

Pennsylvania Section—JOHN DAVID JOHNSON: for his many years of loyal and distinguished service in the operation and management of the Erie Water Department and his active interest and leadership in Section affairs.

Southeastern Section—SHERMAN RUSSELL: for the honest, sincere, and efficient service rendered to his community during more than a quarter of a century; for his devoted efforts on behalf of the water works profession and his wholehearted participation in the activities of the Southeastern Section.

Southwest Section—FRANK STANLEY TAYLOR: for his constructive interest in the affairs of the Section and the Association; his long-term devotion to his job, holding public interest superior to personal interests; and for his many contributions to water works schools and in-service training of employees.

Virginia Section—HOWARD ATWATER JOHNSON: for his outstanding service to his community through the efficient performance of his duties in the field of

water purification; and for his active participation in the affairs of the Virginia Section.

Wisconsin Section—JOHN JAMES MCCARTHY: for his untiring research in the field of water purification, instrumentation, and processes; his long and faithful service to the Wisconsin Section; and his leadership in the West Shore Water Producers' Association. [Died Jan. 15, 1954.]

The Henshaw Cup, awarded annually to the Section having the greatest percentage of its members present at the Section's annual meeting, went to the Pacific Northwest Section, which scored 67.5 per cent.

The Nicholas S. Hill Jr. Cup, awarded annually to the Section making the largest weighted gain in membership, was won by the Southwest Section with 50.51 points.

The Old Oaken Bucket, awarded to the largest Section in the Association, was presented to the California Section for the fifteenth year in succession.

Schedule of Conference Papers and Reports

Water Resources Division—9:30 AM—May 24, 1954

Panel Discussion—Watershed and Reservoir Control in the Northwest—Ownership, Logging Practices, and Policing ..... *Led by* Roy W. Morse, T. V. Berry, C. C. Casad, R. A. Duff, W. A. Kunigk, G. A. Marshall, and A. E. Thompson
Seattle's Plans for the Future ..... Allan Pomeroy
The Pacific Northwest's Resources ..... Fred Merryfield

Water Purification Division—1:30 PM—May 24, 1954

Panel Discussion—Chlorination Stations—Factors in Design and Operating Control ..... *Led by* H. C. Medbery
Practical Design Factors ..... J. M. Sanchis
Safety Measures and Emergency Chlorine Supplies ..... Brian L. Shera
Operating Problems ..... E. J. Allen
Water Supply at Hanford ..... W. R. Conley
The Physical and Biological Distribution of Radioisotopes in the Columbia River Below the Hanford Reactor ..... R. F. Foster and R. E. Rostenbach
Committee Report—Instrumentation and Methods of Testing Radioactive Contamination .... H. H. Gerstein

Open Session—Water Works Practice Committee—2:00 PM—May 24, 1954

Committee Progress Reports
Meters ..... J. G. Carns
Butterfly Valves ..... F. G. Gordon
Sluice Gates ..... C. H. Capen

Water Resources Division—9:30 AM—May 25, 1954

The Radar Measurement of Rainfall ..... A. M. Buswell
The Value of Water Supply Forecasts From Snow Surveys ..... Fred A. Strauss
Weather Control Progress ..... Irving P. Krick

Business Session—Water Purification Division—9:30 AM—May 25, 1954

Committee Reports
- Standard Methods for the Examination of Water and Sewage ..... Ray L. Derby
- Fluoridation Materials and Methods ..... W. L. Harris
- Effects of Synthetic Detergents on Water Supplies ..... Paul D. Haney
- Revision of Manual Chapter on Aeration ..... Guy R. Scott
- Revision of Manual Chapter on Mixing and Sedimentation ..... H. E. Lordley
- Revision of Manual Chapter on Filtration ..... R. L. McNamee
- Specifications and Tests for Water Purification Chemicals ..... J. E. Kerslake

Water Purification Division—1:30 PM—May 25, 1954

Plastic Pipe for Potable Water Supplies ..... Walter D. Tiedeman
Discussion ..... Philip S. Britton
Panel Discussion—New Approaches to the Control of Tastes and Odors in Impounded Waters ..... *Led by* Roy E. Dodson Jr.
Control of Aquatic Growths in Reservoirs ..... B. C. Nesin and Ray L. Derby
A New Method ..... J. K. G. Silvey
Sea Water or Natural Brine for Cation Exchanger Regeneration .... James M. Montgomery
Discussion ..... Eskel Nordell

Open Session—Water Works Administration Committee—2:00 PM—May 25, 1954

Committee Progress Reports
- Air Conditioning ..... F. C. Amsbary
- Employment Survey ..... R. J. Faust
- Safety Manual ..... R. J. Faust

Water Works Management Division—9:30 AM—May 26, 1954

Panel Discussion—Regional and Metropolitan Water Systems ..... *Led by* Abel Wolman, E. H. Campbell, R. B. Diemer, H. H. Gerstein, J. W. McFarland, and Harry B. Shaw
Revenue Bonds in the Water Supply Field ..... D. L. Erickson
Discussion ..... G. W. Francis and L. W. Grayson
Local Water Systems in Reclamation Areas ..... James C. Howland

Transmission and Distribution Division—2:00 PM—May 26, 1954

Portland's New Supply Line ..... Ben S. Morrow
Unusual Installations of Steel Pipe ..... Julian Hinds
Discussion ..... Guy R. Scott
Panel Discussion—Breaks in Oil Pipeline Crossings—Petroleum Industry Construction and Operating Practices ..... *Led by* W. Victor Weir, M. B. Cunningham, J. C. Detweiler, M. P. Hatcher, R. K. Paine, and F. L. Scherer

Water Works Management Division—9:30 AM—May 27, 1954

Panel Discussion—Fire Insurance Rating Problems ..... *Led by* A. A. Ulrich, Paul J. Braun, Loren S. Bush, R. C. Dennett, and Henry R. Herold
The Utility Commissioners' Standard Rules and Regulations ..... John H. Murdoch Jr.
Public Relations Practices That Work! ..... Paul Weir

Transmission and Distribution Division—2:00 PM—May 27, 1954

The Service of Wood Stave Pipe ..... John W. Cunningham
What Type of Valves and Where? ..... Leslie Paul
Discussion ..... D. W. Hopkins
Cavitation in Water Works Systems ..... W. W. Tinniswood
Control of Cavitation ..... W. A. Kunigk

Binding the Year's Journals

Through the cooperation of the Library Binding Institute, an organization of binderies which specializes in binding publications into volumes, arrangements have been made to give information and assistance to AWWA members who want to have their JOURNALS bound. This work may be done in accordance with standards of materials and construction required for durability, service, and accessibility by college, reference, and public libraries. The American Library Association and the Library Binding Institute have cooperated in promulgating "Minimum Specifications for Class A Library Binding" based on research and production and performance experience.

A committee of the American Library Association has certified responsible and reliable library binderies which have proved able to meet these specifications. To obtain standard quality binding, simply request Class A binding at any certified bindery. In obtaining price quotations, state the three dimensions of the volume.

Names and addresses of certified binderies in your area are available from the Library Binding Institute, 501 Fifth Avenue, New York 17, N.Y. Before sending copies to the bindery:

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Papers Scheduled at 1954 Section Meetings

THERE follows a summary listing of papers scheduled for presentation at 1954 Section Meetings. The dates of the Section Meetings from 1950 to 1954 and the locations for 1954 are listed on page 1342. Section officers who were elected at meetings held during 1954 are listed on page 2 P&R in the front of this issue. The programs are listed alphabetically by Sections, without regard to the date of presentation.

Alabama-Mississippi Section—October 24–27, 1954

Address of Welcome ..... *Mayor* J. W. Morgan
Response ..... W. H. H. Putnam
Public Relations ..... Edgar J. Forio
What the Section Can Do for You ..... Jess L. Haley
Insurance and Liability ..... E. T. Beal and Z. H. Tackett
Water Rate Trends ..... T. H. Allen
What Is a Manager? ..... B. R. Morley
Short Courses for Water Works Operators ..... A. N. Beck
Construction Equipment and Methods ..... C. C. Williams
Economics of Meter Repairs ..... E. E. Love
Safety ..... R. C. Campbell

Arizona Section—April 22–24, 1954

Address of Welcome ..... *Mayor* Fred A. Emery
Response ..... Walter C. Harford
Plant Safety ..... W. S. McFarland
Arizona Potable Water Quality ..... George W. Marx
Cast-Iron Fitting Mixup ..... T. L. Johnson
Measuring and Interpreting Corrosive Properties of Soil ..... Russell E. Barnard
Public Relations ..... Jack Grady
The Coloflex Diffuser and Its Application ..... R. B. Banks
Water Well Geophysics ..... H. J. Thiele
Valve Assembly ..... Roy O. Hilbrant
Principles of Corrosion ..... Richmond C. Neff
Record Preservation and Microfilming ..... Jack Fleming
Deep Well Perforations ..... Kenneth G. Brown
Modernizing Customer Accounting ..... Stanford I. Roth

California Section—Regional Meeting—April 9, 1954

Address of Welcome ..... *Mayor* Dan Searle
Response ..... H. C. Medbery
The Monterey Water System ..... U. F. McElroy and E. S. Germain
Assistance Available to Management ..... John C. Luthin
Customer Complaints ..... Norman E. Andrews
Discussion ..... Carrol Clark

California Section—October 26–29, 1954

Address of Welcome ..... *Mayor* George C. Vermillion
Response ..... H. C. Medbery
Harbor Subsidence ..... Robert R. Shoemaker and C. Kenyon Wells
Results of Investigation of Water Main Extension Rules and Regulations .. Phillip F. Walsh

Economics of Safety ..... Earl E. Taylor
How to Meet the Press ..... Malcolm Epley
University Training for Administrators ..... Henry Reining Jr.
It's Rumored Management Says ..... Ralph Foy
Teaming up for Suggestion Plans ..... W. A. Glassford and Howard B. Griffith
Design of Sedimentation Basins ..... J. E. McKee
Recovery and Identification of Complex Organic Chemical Compounds in Drinking Water .. F. M. Middleton
Practical Methods for Measurement and Removal of Radioactive Products in Water ..... Harold Pearson
Vacuum Degasification of Water for Taste and Odor Control ..... Bernard Schiller
Recommended Practice for Design and Manufacture of Prestressed Concrete Pipe ..... Harold L. White
Prestressed Concrete Tanks of the East Bay Municipal Utility District ..... J. W. Trahern
A Suggested Nontechnical Manual on Corrosion for Water Works Forces .. L. B. Hertzberg
Design and Construction of Peters Dam and Appurtenant Works ..... William H. Seeger
Pump System Analysis and Design Methods Used in the Los Angeles Water System ..... Roland Triay Jr.
Water Works Forum ..... *Led by* Lauren W. Grayson
Consumer Service Requirements ..... Emil Mamrelli
Equating Surface and Underground Storage ..... Raymond A. Hill
New Legislation—AB 2699 ..... Ransom Chase
New Legislation—AB 2345 ..... Henry Holsinger
State Water Plans ..... C. A. Griffith
Water Works Problems ..... Dale L. Maffitt

Canadian Section—April 12–14, 1954

Guided Discussion—Operation and Maintenance of Water Works Distribution Systems ..... *Led by* G. H. Baker
Supply and Distribution of Water in the Municipality of Metropolitan Toronto .. L. B. Allan
Present Practice in the Field of Cathodic Protection ..... T. R. B. Watson
Guided Discussion—Water Services ..... *Led by* V. A. McKillop
Guided Discussion—Joints for Water Pipe ..... *Led by* A. H. R. Thomas
An Analysis of Recent Canadian Water Purification Plants ..... A. E. Berry and G. M. Galimberti
Maintenance of the Various Public Utility Services During Construction of the Yonge Street Rapid-Transit Subway ..... R. L. Clark
Guided Discussion—Current Water Works Problems ..... *Led by* H. P. Stockwell

Canadian Section—Maritime Branch—October 4–5, 1954

Sources of Water Supply for City of Moncton ..... W. R. Godfrey
Guided Discussion—Water Works Problems ..... *Led by* M. H. Rogers
Guided Discussion—Office and Accounting Problems ..... *Led by* H. C. Walker
Symposium on Fluoridation ..... *Led by* A. J. Cameron
The Water Works Official and Fluoridation ..... Harry E. Jordan
The Dental Aspects of Fluoridation ..... W. Gordon Dawson
Medical Assessment of Fluoridation ..... J. R. Mayers
Fluoridation—Another Water Works Job ..... D. B. Williams
Some Highlights of the Design and Construction of Camp Gagetown Water Supply ..... Jacques Price

Chesapeake Section—October 27–29, 1954

Address of Welcome ..... *Mayor* Thomas D'Allesandro Jr.
Panel Discussion—Upflow Coagulation Basins ..... *Led by* R. W. Haywood Jr., Roy Dragone, A. A. Kalinske, J. S. Kneale, and Harry N. Lowe
Atomic Waste and Water Supply ..... Joseph A. Lieberman
Filter Rates ..... Norman Jackson
Small-Plant Water Supply Operating Problems ..... Holmes Orgain

Panel Discussion—Financing Water Works Extensions ..... *Led by* Roy Ritter, Charles B. Wheeler, Alfred Machis, and W. Compton Wills
Water Main Failures ..... Donald H. Goldsborough
Applied Protective Coatings for Water Storage Tanks ..... Ludwig Adams
The Feasibility of Biological Warfare Against Public Water Supplies ..... Bernard B. Berger and Albert H. Stevenson
Matching-Funds Program ..... A. S. Nesheim
Distribution System Deficiencies ..... Jerome B. Wolfe
Public Relations ..... E. K. Stabler

Cuban Section—December 3–5, 1953

Address of Welcome ..... Robel Granda Deben
Sterilization of Water for Human Consumption ..... Jesus M. Valdes Roig
Effectiveness of Emergency Chlorination in the Last Typhoid Fever Epidemic ..... Ernesto E. Trelles
Experimental Determination of Coefficient *C* of the Hazen-Williams Formula ..... Luis A. Nunez
Epidemiological Study of the Recent Typhoid Fever Outbreak in the City of Havana ..... Juan Luis Radelat
Critical Study of the Cuenca Sur Aquifer of Havana Province ..... Robel Granda Deben
Minimum Water Works Requirements for Small Towns and Villages ... Gustavo A. Bequer
Determination of the Area of the Almendares River Basin ..... Leandro de Goicoechea and Jorge Quadreny

Florida Section—November 7–10, 1954

Water Pollution—One Phase of Water Conservation ..... David B. Lee
The Air-conditioning Water Usage Problem ..... Frank C. Amsbary Jr.
Financing Water and Sewerage Systems ..... Ross E. Windom
Sources of Water Supply ..... Eugene Brown
Laws of Florida Governing Water Use ..... Frank E. Maloney
Well Cleaning in Florida ..... Robert M. Angas
The Red Tide of the Florida Gulf Coast ..... James B. Lackey and Jacqueline A. Hynes
The Catalytic Reduction Process ..... T. H. Forrest
Biological Studies in Stream Pollution ..... W. M. Beck Jr.
Electronics—Wide-Range Use ..... Marcus Donaldson
Industrial Water Supply ..... A. P. Black

Illinois Section—March 17–19, 1954

Address of Welcome ..... H. E. Hudson Jr.
The Underwriter and Water Works Insurance ..... James C. Molitor
Water Improvements Affecting National Board of Fire Underwriters' Classification ..... A. H. Gent
Panel Discussion—Diversion of Water Works Funds ..... *Led by* A. L. Sargent, L. R. Howson, T. A. Matthews, Clyde Absher, and John H. Hunter
Experience in Studying Organic Taste and Odor Substances in Water, Using Carbon Filter Sampling Methods ..... F. M. Middleton, A. A. Rosen, and C. C. Ruchhoft
Cross Connections and Back Siphonage ..... H. A. Spafford
Maintenance of Household Water-using Electric Appliances ..... J. G. Praetz
Meter, Service Pipe, and House Piping Sizes for New Home Water-using Appliances ..... R. H. Meeker
Heat Pump for Home Cooling and Heating ..... Ritchie P. Dewey
Locating Ground Storage Reservoirs on Distribution Systems ..... M. D. R. Riddell
Relation of Consumption to Ground Water—Storage Capacity ..... Edwin Hancock
Water Service—Cause or Effect of Annexation ..... Homer Chastain
Water Shortages in Illinois ..... A. M. Buswell
Analysis of Water Distribution Networks by Electronic Methods ..... M. B. Gamet
Geologic Aspects of Gas Storage in Relation to Ground Water in Kankakee .. Frank C. Foley
Panel Discussion—Plastic Pipe ..... W. L. Hess, B. A. Poole, and Elmo Conrady

Indiana Section—February 10–12, 1954

Use of Public Relations in the Water Department ..... A. O. Putnam
Water Works Safety ..... Harold L. Londo
Water Main Extension Policy Committee Report ..... A. O. Norris
Progress of Stream Pollution Control in Indiana ..... B. A. Poole
The Membrane Filter and Some Results Obtained With It in the Laboratories of the Indiana State Board of Health ..... S. R. Damon
Discussion ..... S. R. Kin
Wells—Maintenance and Rehabilitation ..... Gerald F. Briggs
Maintenance of Elevated Storage Tanks ..... Lewis S. Finch
Painting ..... Werner Honig
Cathodic Protection ..... F. J. LeFebvre
Metallizing ..... S. B. Dent
No Help Wanted—Automatic Controls Can Do It ..... Chauncey M. Buck
Discussion ..... M. C. Stout
Advantages and Uses of a Continuing Property Record ..... Earl Carter
Discussion ..... R. L. Swingley
Fluoridation Progress Report ..... Roy D. Smiley
Discussion ..... George G. Fassnacht
Water Works Practice—What's New in Indiana
Dehumidifying Pipe Galleries ..... Harry D. Harman and John B. Muldovan
Improving Settling ..... Leo Studebaker

Iowa Section—October 13–15, 1954

Address of Welcome ..... *Mayor* Milo Sedlacek
Response ..... W. J. Lang
A Little Bit of Europe ..... H. V. Pedersen
Application of the Membrane Filter at Des Moines Water Works Plant ..... J. R. Maloney
Discussion ..... R. L. Morris
Panel Discussion—Water Resources
Problems and Planning ..... T. W. Thorpe
Geology ..... G. H. Hershey
Health ..... Paul Houser
Legislation ..... Robert Smith
Panel Discussion—Planning and Management
Air Conditioning Demands Placed Upon Water Utility ..... Frank C. Amsbary Jr.
Are Ad Valorem Taxes Justified to Aid Water Department Financing? .. Charles Mullinex
Water Works and City Planning ..... George Ahrens
Discussion ..... Tom Moore
Split-Treatment Savings at Cedar Rapids ..... Arnold Cherry
Question Box ..... *Led by* Joe Hail

Kansas Section—April 7–9, 1954

Panel Discussion—Combating Water Shortages During the Drought of 1953 and 1954 ..... *Led by* O. L. E. Haff, C. N. Harper, Don Vaughn, John LaDuex, L. A. Martindale, Paschal Grimes, and R. W. Cunningham
Conservation of Water Used in Air Conditioning ..... C. K. Mathews
Public Relations—An Opportunity for Your Water Department ..... A. O. Putnam
Utilizing Water Resources in Kansas Water Development Plans of the Corps of Engineers—Their Effect on Public Water Supplies ..... Keith R. Barney
Water Development Plans of the Bureau of Reclamation—Their Effect on Public Water Supplies ..... Marion E. Ball
Coordinating Federal Water Resource Programs With Local Needs .... Murray A. Wilson
Panel Discussion—City Ownership of Meters ..... *Led by* Fred Diehl, Harold R. Volkmann, and Kenneth G. Bittel

Pump Maintenance ..... Darwin R. Soder
Panel Discussion—Are Your Water Rates Adequate? ..... *Led by* B. H. Van Blarcum, Robert J. Mounsey and Bernard J. Brungardt

Kentucky-Tennessee Section—September 20–22, 1954

Address of Welcome ..... *Mayor* Ben West
Response ..... J. Stephen Watkins
Experience in Studying Organic Taste and Odor Substances in Water, Using Carbon Filter Sampling Methods ..... F. M. Middleton
Blanket Liability Insurance ..... W. Louis Simpkins
Handling Plating Wastes ..... F. W. Kittrell
Automatic Industrial-Waste and Sewage Sampler ..... W. B. Henderson
Some Factors Involved in the Abatement of Industrial Pollution, With Special Reference to Wastes From Viscose Processes ..... W. J. Eldridge
Sludge Deposits in Stream Analyses ..... Walter C. Martin
Meter Maintenance and Repairing ..... Jerome W. Baker
The Membrane Filter Technique and Its Application to Water Analysis ..... E. L. Shipe
Valve Insertion ..... Ray E. DeWeese and G. J. Manahan
History and Expansion of Nashville Water Systems ..... Robert L. Lawrence Jr.
Wells—Their Maintenance and Rehabilitation ..... T. M. Ragsdale
Water Works Operators Forum ..... *Led by* E. E. Jacobson
Radioactive Fallout in Rain in the Cincinnati Area ..... L. R. Setter
The Importance of Intergovernmental Relations in Public Works ..... Edward C. Harding
The Manufacture of Newsprint in a Modern Mill ..... Sam Richardson

Michigan Section—September 15–17, 1954

Address of Welcome ..... *Mayors* John E. Medendorps and Basil O'Grady
Response ..... Douglas Feben
News of the Field ..... John E. Vogt
Muskegon Water Filtration Plant ..... R. Lee Sensabaugh
Muskegon Heights Water Filtration Plant ..... Louis Haase
Choosing the Proper Motor and Controls for High-Lift Pumping ..... A. C. Michael and G. I. Stormont
Water Resource Supply Conditions
  Legal Problems ..... Norman F. Billings
  Legal Implication of Ownership and Control of Ground Water and Surface Water ..... Florence Clement Booth
Solutions to Distribution System Problems
  The Value of Hydrant Flow Tests ..... R. C. Loughead
  Pressure Records on System ..... Alfred E. Hansen
  Leak Detection and Distribution System Studies ..... Cyrus R. Bird
  Booster Stations ..... A. T. Kunze
Metropolitan Water Authority ..... George G. Schmid
Water Charges to Areas Outside Corporation Limits ..... Louis E. Ayres
  Discussion ..... Carl Nelson
Legal Liability of Water Superintendents and Municipal Officials ..... H. Winston Hathaway
Membrane Filter ..... Lawrence Beebe
Operating Statistics ..... Claud R. Erickson
Panel Discussion—Handling of Chlorine and Chlorine Dioxide
  Safety Precautions ..... Virgil Langworthy
  Design Features of Chlorine Handling and Housing at Lansing ..... Joseph O'Dell
  Detroit's New Chlorine Station ..... Leo V. Garrity
  Sodium Chlorite ..... Robert Haw

Minnesota Section—October 6–8, 1954

Address of Welcome ..... *Mayor* Joseph E. Dillon
Response ..... George J. Schroepfer

The Coagulation of Raw Water ..... F. Robert MacGonagle
Safety in Water Works Construction and Operation ..... W. C. Lathrop
Construction and Operation of Filters ..... G. R. Scott
A Report on the Minnesota Certificate Program for Water and Sewage Plant Operators ... C. M. Bach
Ground Water Geology and Conservation ..... G. M. Schwartz
Chemical Stabilization ..... M. H. Bischoff and C. W. Callaghan
Taste and Odor Control ..... Joseph G. Filicky
Round Table Discussion—Problems in Small Town Water Works .....
Development of and Experience in the Operation of Suspended-Solids Contact Basins ..... H. H. Behlmer
Panel Discussion—Care and Maintenance of Pumps .....
Ira Vraalstad, R. M. Jenson, and George J. Poole

Missouri Section—September 26–28, 1954

Municipal Sanitation in Missouri—Backsight and Foresight ..... L. E. Ordelheide
Discussion ..... Bruce J. Carl
Municipal Responsibility in the Conservation of Missouri's Natural Resources .. Jay Morrow
Panel Discussion—The Effect of Increased Air-conditioning Demand on Water Works Planning ..... *Led by* Melvin P. Hatcher
What Goes Into the Cost of Production and Delivery of Water and the Relation to Rate Structures ..... W. Victor Weir
Fostering Water Works Careers ..... John H. Murdoch Jr.
Measurement of Daily Pumpage Without a Master Meter ..... F. Gordon Clark
Panel Discussion—Problems of Water Works ..... *Led by* Edward R. Dougherty
Panel Discussion—Reporting Your Activities to the City Administration and Stockholders
City Manager Form of Government ..... Charles A. Green
Council Form of Government ..... D. Elrow Crane
Private Company ..... S. C. Casteel
Panel Discussion—Service Extension Policies—Water and Sewage
Municipal Water Systems ..... Vance C. Lischer
Privately Owned Water Systems ..... Albert Learned
Sewage Systems ..... Charles A. Haskins
Water Works Accounting Principles and Systems ..... Homer L. Thorp
Panel Discussion—Keeping Adequate Records ..... *Led by* Raymond E. Piner
Handling Customer Complaints ..... Lawrence E. Martin
Elevated-Tank Maintenance ..... Ed Alt
Round Table Discussion—Factors Relating to Main Failures ..... *Led by* Frank E. Dolson
Chemical and Physical Reactions in Hot-Water Heaters ..... Robert J. Popalisky

Montana Section—April 23–24, 1954

Address of Welcome ..... *Mayor* W. Gilbert Lowe
Public Employee Benefits ..... John Sasek
River Basin Development ..... Dale L. Maffitt
Round Table Discussion ..... *Led by* John Dennis
The Effect of Beaver on the Quality of Creek Water ..... George Malben and H. B. Foote
Water Works Safety ..... Dave Thomas
Civilian Defense ..... Hugh Potter

Nebraska Section—April 21–23, 1954

Address of Welcome ..... *Mayor* Clark T. Jeary
Response ..... Charles B. Elliott
Swimming Pools and Their Operation ..... Ralph N. Perkins Sr.
City Ownership and Maintenance of Water Meters ..... Dave R. Hill
A Planned Water Department Safety Program ..... Earl Frederiksen
Utilities Versus Streets ..... Stanley A. Michael
Procedures for Maintenance Painting ..... Albert Kimmel

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Section	*1950*	*1951*	*1952*	*1953*	*1954*	*Meeting Place—1954*
Alabama-Mississippi	Oct. 11–13	Sep. 24–26	Nov. 16–19	Oct. 4–7	Oct. 24–27	Birmingham, Ala.
Arizona	Mar. 31–Apr. 2	Mar. 28–31	Apr. 3–5	Apr. 16–18	Apr. 22–24	Tucson, Ariz.
	Nov. 30–Dec. 2	——	——	——	——	——
California	Apr. 21*	Apr. 6*	Apr. 17–19*	——	Apr. 9*	Monterey, Calif.
	Oct. 24–27	Oct. 23–26	Oct. 28–31	Oct. 27–30	Oct. 26–29	Long Beach, Calif.
Canadian	Apr. 3–5	May 21–23	May 26–28	Apr. 6–8	Apr. 12–14	Toronto, Ont.
	——	——	Oct. 21–22†	Sep. 21–22†	Oct. 4–5†	Moncton, N.B.
Chesapeake	Nov. 1–3	Oct. 31–Nov. 2	Oct. 29–31	Oct. 28–30	Oct. 27–29	Baltimore, Md.
Cuban	Nov. 13–15	Nov. 29–Dec. 1	Dec. 4–6	Dec. 3–5	——	——
Florida	Nov. 13–15	Oct. 28–31	Nov. 16–19	Oct. 11–13	Nov. 7–10	St. Petersburg, Fla.
Illinois	Apr. 12–14	Mar. 28–30	Mar. 26–28	Mar. 18–20	Mar. 17–19	Chicago, Ill.
Indiana	Apr. 26–28	Feb. 7–9	Feb. 13–15	Feb. 11–13	Feb. 10–12	Indianapolis, Ind.
Iowa	Oct. 26–27	Oct. 25–27	Oct. 23–25	Oct. 14–16	Oct. 13–15	Cedar Rapids, Iowa
Kansas	Apr. 19–21	Apr. 11–13	May 3	Apr. 22–24	Apr. 7–9	Emporia, Kan.
Kentucky-Tennessee	Oct. 23–25	Sep. 17–19	Sep. 15–17	Sep. 21–23	Sep. 20–22	Nashville, Tenn.
Michigan	Oct. 25–27	Sep. 19–21	Sep. 24–26	Sep. 3–4	Sep. 15–17	Muskegon, Mich.
Minnesota	Sep. 6–8	Sep. 12–14	Sep. 9–12	Sep. 1–5	Oct. 6–8	St. Paul, Minn.
Missouri	Oct. 1–3	Sep. 30–Oct. 2	Sep. 21–23	Sep. 27–29	Sep. 26–28	Jefferson City, Mo.
Montana	Apr. 21–22	Apr. 20–21	Apr. 11–12	Apr. 24–25	Apr. 23–24	Bozeman, Mont.
Nebraska	Apr. 13–14	Apr. 19–20	Apr. 17–18	Apr. 16–17	Apr. 22–23	Lincoln, Neb.
New England	——	——	——	——	——	——
New Jersey	Oct. 26–28	Oct. 25–27	Oct. 23–25	Oct. 22–24	Nov. 4–6	Atlantic City, N.J.
New York	Mar. 30–31	Apr. 5–6	Apr. 17–18	Apr. 16–17	Apr. 22–23	Watertown, N.Y.
	Sep. 7–8	Sep. 13–14	Sep. 4–5	Sep. 9–11	Sep. 9–10	Montauk, N.Y.
North Carolina	Nov. 13–15	Nov. 12–14	Nov. 10–12	Nov. 9–11	Nov. 8–10	Asheville, N.C.
Ohio	Sep. 28–29	Sep. 27–28	Sep. 18–19	Sep. 10–11	Sep. 22–24	Dayton, Ohio
Pacific Northwest	May 11–13	May 17–19	Apr. 24–26	Apr. 16–18	——	——
Pennsylvania	Oct. 18–20	Sep. 19–21	Jun. 18–19	Jun. 17–19	Jun. 23–25	Allentown, Pa.
Rocky Mountain	Sep. 27–29	Sep. 24–25	Sep. 15–17	Sep. 21–23	Nov. 9–10	Colorado Springs, Colo.
Southeastern	Oct. 23–25	——	Mar. 24–26	Mar. 23–25	Mar. 29–31	Greenville, S.C.
Southwest	Oct. 16–18	Oct. 14–17	Oct. 12–15	Oct. 18–21	Oct. 17–20	El Paso, Tex.
Virginia	Nov. 6–7	Nov. 7–9	Nov. 5–7	Nov. 4–6	Nov. 3–5	Richmond, Va.
West Virginia	Sep. 13–14	Oct. 4–5	Oct. 2–3	Sep. 3–4	Nov. 8–9	Huntington, W.Va.
Wisconsin	Sep. 19–21	Sep. 25–27	Sep. 16–18	Sep. 22–24	Sep. 28–30	Green Bay, Wis.

* Regional meetings. † Maritime Branch.

Journal

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Section Membership at Time of, and Total Attendance at, Section Meetings—1950–1954

Section	1950		1951		1952		1953		1954	
	Membership	Attendance	Membership	Attendance	Membership	Attendance	Membership	Attendance	Membership	Attendance
Alabama-Mississippi	167	141	163	181	169	400‖	177	182	189	311
Arizona§	83	93	72	154	71	173	72	41	76	199
California§	947	1,267	1,028	1,252	1,044	1,434	1,084	1,126	1,193	1,709
Canadian§	515	728	531	516	582	756	581	617	608	848
Chesapeake	245	149	247	119	241	250	247	224	248	210
Cuban	61	216‖	65	52	73	52	72	32	69	#
Florida	240	216‖	300	282	306	400‖	327	287	328	305
Illinois	459	284	470	348	475	418	482	407	504	474
Indiana	256	264	289	299	333	392	330	386	332	399
Iowa	109	242	115	195	119	182	121	178	133	191
Kansas	139	179	139	186	187	*	206	170	220	191
Kentucky-Tennessee	199	222	186	202	186	252	186	203	189	294
Michigan	284	214	294	225	319	242	349	164	386	263
Minnesota	208	177	216	167	230	179	229	166	241	179
Missouri	169	125	181	202	190	225	189	242	198	260
Montana	58	140	62	120	59	168	58	107	55	117
Nebraska	55	23	64	158	75	152	82	224	95	200
New England	192	†	205	†	211	†	218	†	218	†
New Jersey§	350	218	379	276	411	311	414	318	436	340
New York§	682	*	715	340	743	375	741	355	805	420
North Carolina	176	222	178	242	182	261	188	294	191	255
Ohio	382	321	392	320	400	297	403	252	445	406
Pacific Northwest	295	330	299	257	315	267	345	346	441	‡
Pennsylvania	390	182	419	214	433	215	455	204	465	234
Rocky Mountain	145	126	141	128	157	122	156	125	170	100
Southeastern	170	152	181	‡	190	220	203	205	246	313
Southwest	678	795	702	708	779	582	938	803	945	681
Virginia	171	215	177	84	183	237	179	226	188	230
West Virginia	92	154	94	156	98	130	102	120	103	212
Wisconsin	150	290	164	305	176	314	181	288	182	316

* No record of attendance.
† No regular meeting scheduled. Membership given as of dates of conferences.
‡ Regular meeting canceled. Business meeting held at annual conference.
§ Only one of section's meetings recorded here.
‖ Joint meeting.
Meeting canceled.

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Correction

The name of one of the coauthors of "Measurement of Radioactive Fallout in Reservoirs" (E. J. Kilcawley et al., November 1954 JOURNAL, page 1101) was given incorrectly as "H. E. Schultz." His name should have read: "H. W. Schultze." (The correct spelling appears in the author index.)

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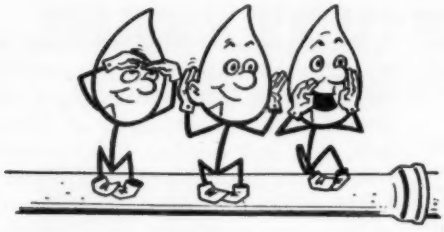

Percolation and Runoff

Just like Santa Claus, the Christmas disanonymization of contributors to P&R is by way of becoming a tradition. Well, maybe not *exactly* like Santa Claus, for though we give credit, we're not at all sure they don't receive responsibility. More, perhaps, like murder, membership in Editors Anonymous will out. The motive, though, is strictly Santa Clausible—our conscience and the Christmas spirit combining annually to suggest a salute to those who do the real work for us—clipping and collecting the stories from which our P&Rticles are fabricated.

Current measure of the tradition is the seven years during which Editors Anonymous, synthetic society of these silent partners of P&Rism, has flourished in complete disorganization. And measurers are three charter contributors who have never missed the anonymost rank—Ellsworth Filby, Joe Wafer, and Syd Wilson. That rank—*Incurable*—is reserved for those whose contributory compulsion is chronically acute. Those a little less seized and a little less often are *Deetees,* while *Shakes* are more and *Jitters* still more controlled, if sometimes not actually aware of their diagnosis.

Symptomatic of these various EAilments is the more than occasional less than seriousness that infests these columns, imputable in 1954, and for as many years as their powers purport, to these epidemicians:

Incurables

C. H. Capen[6] — W. R. LaDue[4]
E. L. Filby[7] — C. E. Painter[2]
R. E. Hansen[6] — J. M. Wafer[7]
M. J. Harper[2] — Henry Wilkens[2]
P. S. Wilson[7]

Deetees

W. N. Beadle[4] — R. L. Tyler[2]
G. E. Symons[5] — D. B. Williams[4]

Shakes

Reginald Bowering — T. M. Riddick[6]
B. E. Payne[2] — W. V. Weir[5]

Jitters

V. H. Allen — J. E. Kleinhenz[2]
W. W. Aultman[3] — A. M. Krzyminski
M. S. Bramman — D. L. Maffitt
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F. M. Hromada — W. E. White
L. A. Jackson[2] — R. C. Willson[3]
W. B. Kirchman[3] — J. C. Zufelt

Just like Santa Claus, too, we'll certainly say "Merry Christmas to All" —but especially to those *very good*

(Continued on page 28 P&R)

(*Continued from page 27 P&R*)

boys on our list. May their affliction continue into 1955, to give them and, thus, us, a Happy New Year!

Hot is the way a quarter of the water you supply to your domestic customers is drawn from the tap. That's a fact we owe to the data provided in a recent study made by Ohio State University under the sponsorship of *Household* magazine in cooperation with Rockwell Mfg. Co. and the Ruud Mfg. Co. Tracing the exact amounts of hot water used by an "average" family of five in Columbus, Ohio, the OSU researchers came up with an eight-month total of 14,825.4 gal., just under 25 per cent of the approximately 60,000-gal average use for a family of that size. Of the hot tot, 2,744.2 gal poured into the kitchen sink; 2,562.3, into the dishwater; 1,908.2, into the automatic laundry machine; 463.8, into the utility sink; 4,830.4, into the tub and shower; and 2,316.5, into the lavatory. Or even more precisely: Hot showers required 15.2 gal of hot water and tub baths 11.4 gal in winter and 9.4 in summer. A load of white clothes required about 16.5 gal as against 5.7 gal of cooler water for colored garments. Men use 3.5 gal of hot water per shave and a family of five about 7.5 gal per day for washing hands and faces. And twice as much hot water is used for laundering in summer as in winter.

None of the internal or infernal details are any skin off your teeth, of course, but they may give you a clue to some of your customer complaints. Meanwhile, you'll be disgusted to know that of the $20.62 that all this hot water cost, only $3.37 was paid to the water works while $15.68 went to the gas company. It's not the heat, it's the humility!

A centennial is being celebrated by the Elizabethtown Water Co., which was chartered Oct. 6, 1854, to provide filtered water to the people of Elizabeth, N.J., and vicinity. The company points with justifiable pride to its record of service then and now, and boasts of being one of the few water utilities in northern New Jersey whose customers did not suffer from shortages during the recent drought years.

H. O. Hill, assistant chief engineer of fabricated steel construction for the Bethlehem Steel Co., has been elected to Honorary Membership in the American Welding Society for his pioneering work in welding and his services to the society. The award was presented at Chicago during the AWS meeting November 1–5. Hill's activities in AWWA include membership in the committee on steel pipe and chairmanship of the joint AWWA–AWS–NEWWA committee on steel standpipes and elevated tanks.

Edward S. Hopkins has retired as principal associate engineer of the Baltimore Bureau of Water Supply and has opened a consulting office in sanitary engineering, in association with Harry R. Hall, retired chief engineer of the Washington Suburban Sanitary Dist., and Ambrose E. McCaskey Jr., head of the Dept. of Eng. at Marshall College. The office is located at 407 Morris Bldg., 306 N. Charles St., Baltimore 1, Md.

L. O. Williams Jr., director of the Div. of Environmental Sanitation for the Wyoming Dept. of Public Health, died suddenly on October 11. Long an active AWWA member, he had received the Rocky Mountain Section's Fuller Award in 1943.

(*Continued on page 30 P&R*)

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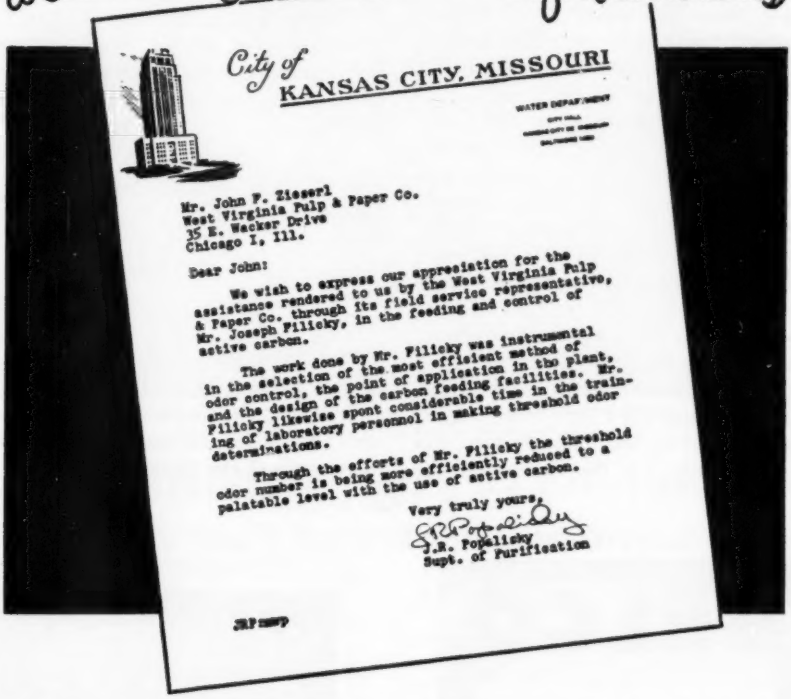

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(*Continued from page 28 P&R*)

With cold weather problems on their way, it's time to trot out last year's lessons. And what better example than that which faced Hobart Leonard, manager of the Virginia City, Nev., Water Co. last January, when a subzero storm with winds of over a hundred miles an hour hit the Comstock and began to freeze up both the water in the distribution system's open wooden flumes and the crew attempting to keep the system open. Fighting a losing battle, with his men unable to work more than a few minutes at a time in the bitter cold, Hobart resorted to antifreeze—the best bourbon available from the Delta Saloon—and kept the water flowing. Of course, those conditions are a little more rugged than most of us are likely to face, but so apparently are the men, and the customers. Which prompts us to wonder why they'd bother with the water in the first place.

At any rate, if you plan to use the technique this season, don't suppose for a minute that the bourbon went into the system—the water system, that is.

J. E. Summerville, field service engineer for Hall Labs., Inc., at Birmingham, Ala., has been appointed a member of the headquarters staff at Pittsburgh, Pa.

Earl H. Bodison, district sales manager for Hammond Iron Works at Bristol, Pa., has been appointed Eastern Div. sales manager, with headquarters in New York.

(*Continued on page 32 P&R*)

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BIF METERS FEEDERS CONTROLS

(Continued from page 30 P&R)

Water freshness via wire is not a brand new concept. A successful method of using electric power in conjunction with permselective membranes for producing fresh water from sea water was discussed in the JOURNAL as long ago as 1952 (vol. 44, p. 845). But now the job has been completed—the British Department of Scientific and Industrial Research having succeeded in reversing that process to produce electric power from the mixing of fresh water and salt water through similar membranes. All of which makes a neat little package of water to wire to water again.

First in line to buy one ought to be our friends in California, who have long been fretting with the problem of building an 1100-mile pipeline to carry water from the mouth of the Columbia River in Oregon to their semiarid south. What with the Pacific at hand, they haven't needed the water anyway—just the freshness—and with that cableable it shouldn't be very long before even Hollywoodsmen will be benefiting by chasing their regular beverages with Columbiated Pacifizz.

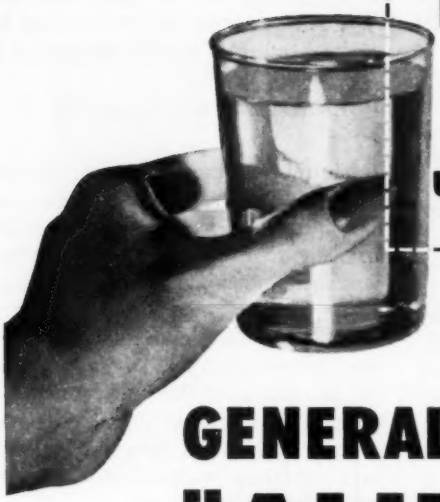
What really has opened up this speculation is the expectation that the British discovery will solve the power-cost problem in permitting the exploitation of a heretofore untapped source of power. And what a source! "The osmotic pressure of sea water," it is explained, "is about 20 atmospheres, and when a river mixes with the sea, free energy equal to that obtainable from a waterfall 680 ft high is lost." (Imagine dropping the Columbia River at its mouth over a 680-ft cliff—four times the height of Niagara—and you'll see why we haven't even bothered to consider having California exploit some of its own river mouths.) This waste pressure can be harnessed by separating alternate layers of salt and fresh water by alternate basic and acidic membranes, the membranes of each type connected in series yielding the electricity. Before we add a tidelands power problem to our present list of worries, however, we're going to have to wait to find out whether the process is economically feasible. That promises to depend primarily upon the time that a hydroelectric pile of the membranes will operate before they need replacing and before the interior of the unit needs to be cleaned.

Of course, all this concern over water freshness will seem more than a little silly if Willie Willis, who rode an 18x35-ft balsa raft out of Callao, Peru, last June 22 and arrived in Pago Pago, American Samoa, on October 15, isn't a freak or a fraud. For on his return, Willis contended that, "after about the first six weeks, his water cans rusted and, for the balance of the 115-day voyage, he had drunk sea water without ill effects." The fact that Willie is a theatrical writer makes his dramatic statement just a wee bit suspect. But then Coleridge was a writer, too, and perhaps his *Ancient Mariner* has actually been leading us astray all these years.

Inasmuch as the ocean is a little cool just now for a personal test of Willie's claim, we have instead checked up on the British experiment, using, however, gin and dry vermouth as the two liquids. Talk about power!

The butterfly valve line of Builders-Providence, Inc., Div. of B-I-F Industries, Inc., has been extended to include rubber-seated valves conforming with the new AWWA standard C504. Manual, electric, hydraulic, and pneumatic operators for the Model BV valve are also available.

(Continued on page 34 P&R)



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(Continued from page 32 P&R)

Water's powers, about which we've been close to boastful ever since P&R got together, are apparently not the only powers that be. Turn up our nose as we will at sewage, there is no denying that its powers have already been substituted for water's at Tampa's latest sewage treatment plant—the largest in Florida. There it is that the plant's electric power is being supplied by two Worthington engines operating on sewage gas produced during the treatment of raw sewage. All of which is an example not only of power but of self-sufficiency. And self-sufficiency is another matter on which we'd rather not dwell just now, after reading about the gassy Lancaster, Ohio, hydrant which caught fire last month and had to be saved by a chemical extinguisher. These are, of course, worrisome signs, and in view of the rate at which sewage has for some time been replacing water in our streams, we begin to wonder if water is getting to be a bit obsolete.

It sure was a tough summer!

Liquid assets were really flowing all over southeastern Georgia last month as local banks in the drought-stricken area rented tank trucks and sent their officials out to deliver emergency water supplies to parched farms. Not just for the public relations either, the bankers undoubtedly had in mind the protection of their investments as well. Better a little liquid now than a lot of liquidation later! Financiers have certainly watered stock before, but scarcely altruistically.

(Continued on page 36 P&R)

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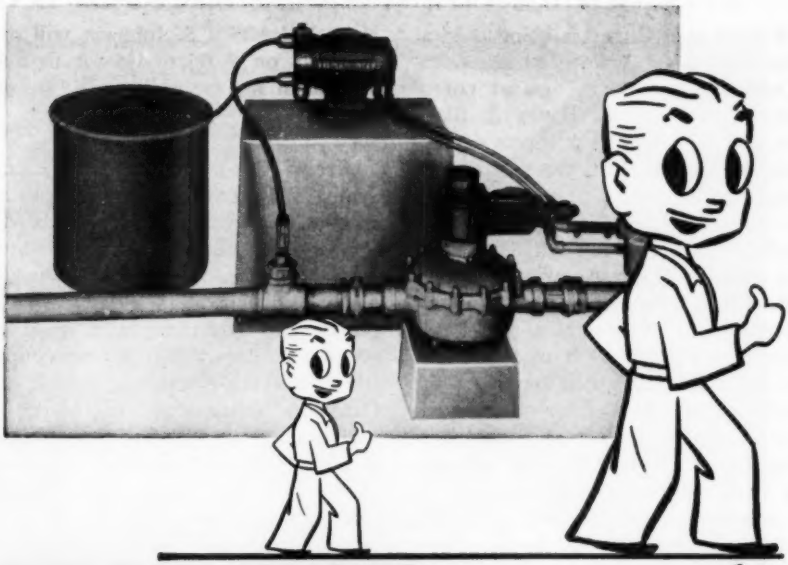

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BIF METERS FEEDERS CONTROLS

(Continued from page 34 P&R)

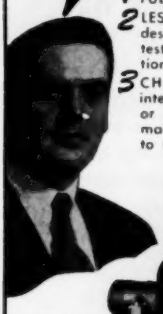
A king size Curad is being used at Waynesboro, Ga., to protect an underground piping system against corrosion. Developed by Bauer & Black Div. and the Polyken products department of Kendall Co., the plastic tape wrapping is merely another form of the Bauer & Black waterproof plastic bandage—a tough polyethylene adhesive film, resistant to galvanic, water, and chemical attack. The Waynesboro installation is only a small one, protecting 200,000 sq ft of gas transmission and distribution pipe, but the machine methods used for cleaning the pipe, wrapping it with tape, and overwrapping it with saturated asbestos felt in a cold application are said to be adaptable to large scale projects. Now if Johnson & Johnson will only get busy on a Band-Aid for first aid to broken mains, we'll really be well healed.

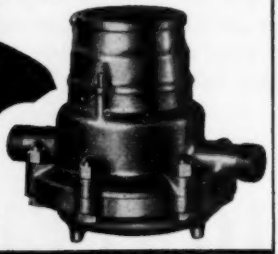
Art of the sewer has finally rated sympathetic recognition, and by as authoritative a group as the Florida Water and Sewage Works Operators Association. Art, of course, is Art Carney, substar of TV's *Jackie Gleason Show,* and his recognition took the form of Honorary Life Membership in the FWSWOA, granted during last October's business meeting of the association on the scholarly grounds of the University of Florida in Gainesville. For Art's sake, we're happy. For art's sake, hmmmmmm.

(Continued on page 38 P&R)

AMERICAN METERS
mean LIFETIME Savings
these 3 ways!

1 FULL REVENUE—highly accurate.
2 LESS MAINTENANCE — simple design, fewer working parts, tested frost-resistant construction.
3 CHEAPER MAINTENANCE — interchangeable individual parts or assemblies. Repairs easily made, replacement stocks held to minimum.





WRITE FOR DETAILS

BUFFALO METER CO.
2914 MAIN STREET
BUFFALO 14, NEW YORK

BELL JOINT LEAK CLAMPS
GASKET SEALER COMPOUND
C-I-60 CAST IRON BOLTS

Carson glands and bolts made of corrosion-resistant C-I-60 cast iron—last as long as cast iron pipe. Glands accommodate variations in pipe dimensions, insure uniform compression of rubber gasket.

Write for information

H. Y. CARSON COMPANY
1221 Pinson St. Birmingham, Ala.

DE LAVAL pumps America's water...

These five De Laval centrifugal pumping units, each consisting of two pumps in series, are installed in the Hays Mine Station of the South Pittsburgh Water Company. The unit in the foreground is designed for 5,400 gpm against a total head of 395 ft. at 1,200 rpm and is driven by a 600 hp motor. The other four units are identical, each designed for 9,000 gpm against a total head of 395 ft. at 1,200 rpm, and are each driven by a 1,000 hp motor.

More than 80% of America's cities depend on De Laval pumps to meet their water needs efficiently and economically. De Laval municipal pumping units range in capacity from 100 thousand to 100 million gallons per day.

NOTE:

Have you considered the dollars and cents savings you can make by replacing your old pumps with new, more efficient De Laval units? Write to De Laval for Pump Fax bulletin which includes a valuable "power savings" chart.

DE LAVAL *Centrifugal Pumps*

DE LAVAL STEAM TURBINE COMPANY

822 Nottingham Way, Trenton 2, New Jersey

DL 298A

(Continued from page 36 P&R)

Having taken over the government's chlorine and caustic soda plant at Muscle Shoals, Ala., for a bargain $15,127,000 (it cost approximately $21,000,000 and has never really been used since its completion as a Korean-era defense plant in 1952), the Diamond Alkali Co. is settling down to invest a few more millions in getting the plant ready for active production and expects to start turning out 225 tons of chlorine and 252 tons of caustic soda daily, starting January 1. The plant uses the mercury-cell method of production.

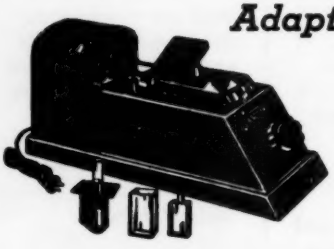
The cancer answer at long last—and, of course, it's water. At any rate, the latest theory is, if cigarette smoking really can cause lung cancer, then water, hookah style, can't help but prevent it, drowning all the deleterious ingredients (if any, that is) as it cools the smoke, improves the taste, and betters the aroma. This is the basic theory of the new "Aquafilter," a cigarette holder which filters the smoke through *real* water.

Even if this type of gadget does prove to be a satisfactory answer to the cancer problem (if there is one, of course)—and, naturally, we have every confidence in water's abilities in any line—there isn't too much likelihood that supplying the necessary water will add a significant load to the water works burden. Which is sort of to say—how far from the cigarette is it still considered smoking?

(Continued on page 40 P&R)

KLETT SUMMERSON
ELECTRIC PHOTOMETER

Adaptable for Use in Water Analysis

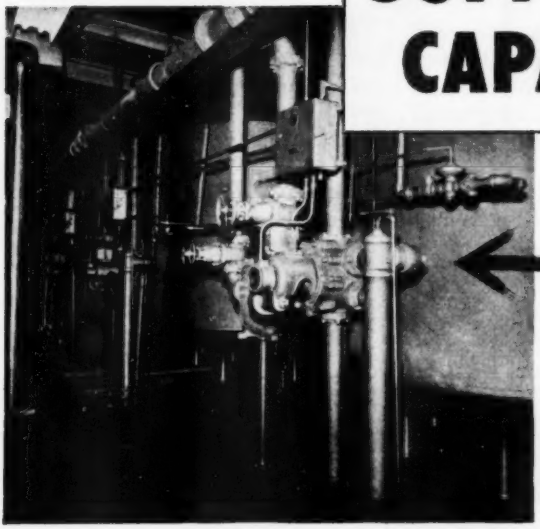


Can be used for any determination in which color or turbidity can be developed in proportion to substance to be determined

KLETT MANUFACTURING CO.
179 EAST 87th STREET · NEW YORK, N. Y.

How the Town of Normal, Illinois

TRIPLED SOFTENING CAPACITY



...of the same softeners

...by changing to PERMUTIT Q

● Replacing old-fashioned zeolite with the high-capacity ion exchange resin, Permutit Q, saves Normal over $7,000 a year!

Normal's three automatic softeners were installed back in 1946, before high-capacity Permutit Q was available. Each softener removed hardness from 83,000 gallons of water between regenerations for a daily delivery of 700,000 gallons of softened water.

Recently town officials called in Consulting Engineers, Farnsworth and Conley, of Bloomington, Illinois, who recommended replacing zeolite with modern, high-capacity Permutit Q.

Look at the benefits gained from this change! The capacity of each softener is up from 83 to 270 thousand gallons between regenerations. Salt Consumption is down to about ¼ lb. per thousand grains of hardness removed. Flow Rate —up from 285 to 510 gpm. Regenerations are down from 3 times to once per day per softener.

A change to Permutit Q may effect similar economies for your city. We'll gladly send helpful data.

The Permutit Company, Dept. JA-12, 330 West 42nd Street, New York 36, N.Y., or Permutit Company of Canada, Ltd., 6975 Jeanne Mance Street, Montreal.

WATER CONDITIONING HEADQUARTERS FOR OVER 40 YEARS

PERMUTIT®

(Continued from page 38 P&R)

John C. Hart, who has been Kansas City, Mo., representative for Neptune Meter Co., has been appointed district manager of the Louisville, Ky., office. He succeeds John J. Carroll, who was recently transferred to New York as general sales manager.

George J. Zimmerman, formerly chief of the Technical Liaison Div. for the Corps of Engineers, has been appointed staff assistant for management controls of The Carborundum Co.

Water has finally joined blood, sweat, tears, and brandy in Sir Winston Churchill's repertoire. Known as he is all through Britain for his love of brandy, the P.M. surprised everyone at a recent Conservative party conference at Blackpool (of all places) by calling for a glass of water midway through his speech. Having tossed it off without wincing, the primed Prime Minister assured his audience: "I only do it to show you that I can." About time, too!

An Industrial Wastes Div. has been formed by Kaighin & Hughes, piping and mechanical contractors, with Edmund B. Besselievre, formerly of The Dorr Co., as its manager.

Joseph V. Fitzsimmons has been appointed sales representative for the Boston district office of Warren Foundry & Pipe Corp. Previously he had been with Kennedy Valve Co. and Utilities Supply Co., Medford, Mass.

Limitorque® VALVE OPERATORS

Type SM with Worm Gear Drive on R-S Butterfly Valve.

Send for latest catalog L-54

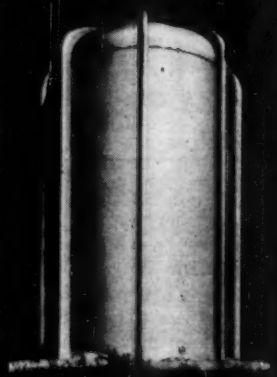
By REMOTE CONTROL

From coast to coast, hundreds of LimiTorque Controls are in service in water works and sewage disposal plants for automatic or push-button operation of valves up to 120 inch diameter. Why is acceptance so widespread? Because LimiTorque Operators are designed to provide dependable, safe and sure valve actuation at all times.

LimiTorque is self-contained and is applicable to all makes of valves. Any available power source may be used to actuate the operator: Electricity, water, air, oil, gas, etc.

A feature of LimiTorque is the torque limit switch which controls the closing thrust on the valve stem and prevents damage to valve operating parts.

PHILADELPHIA GEAR WORKS, Inc.
ERIE AVENUE and G STREET, PHILADELPHIA 34, PA.
New York • Pittsburgh • Chicago
Houston • Lynchburg, Va.



2 million Gallons

500,000 Gallons

400,000 Gallons

5 million Gallons

HAMMOND
WATER STORAGE TANKS

1½ million Gallons

For more than half a century Hammond has been incorporating integrity of design and sound construction characteristics in all its products—Steel Standpipes • Steel Reservoirs • Elevated Water Tanks • Water Spheres • Filtration and Purication Units for general water supply and fire protection systems.

Hammond Water Storing and Processing Vessels are built to all standard codes and specifications including those of the American Water Works Association, Associated Factory Mutual Fire Insurance Companies, the National Board of Fire Underwriters, the Factory Insurance Association..

100,000 Gallons

Catalog H_2O details and describes all HAMMOND Water Storage and Processing Vessels ... Write for your copy.

HAMMOND
IRON WORKS

WARREN and BRISTOL, PA. • PROVO, UTAH • CASPER, WYO. • BIRMINGHAM, ALA.

Sales Offices: NEW YORK 20 • AKRON • BOSTON 10 • BUFFALO 2 • CHICAGO 3 • CINCINNATI 2 • CLEVELAND 15 • EL PASO • HOUSTON 2 • LOS ANGELES 14 • PITTSBURGH 19 RICHMOND 20 • SAN FRANCISCO • WASHINGTON 6, D.C. • HAVANA • TIPSA BUENOS AIRES

The Reading Meter

Studies of Waste Water Reclamation and Utilization. *A. F. Bush & S. F. Mulford. Pub. 9, State Water Pollution Control Board, Rm. 610, 721 Capitol Ave., Sacramento 14, Calif. (1954) 82 pp.; paperbound; free*

With more than 325 bil gal of waste water available in an area of natural water scarcity, the justification for this report is evident. There are already in California over 200 locations in which waste waters are utilized—approximately half of them for irrigation, half for aquifer recharge. The study has concentrated on the pollution danger inherent in reclaiming sewage and industrial wastes.

Water Supply and Sewage Disposal. *Report TAR 46 (52) 1, Technical Assistance Mission 46, Organization for European Economic Cooperation, 2 Rue Andre-Pascal, Paris (1953) 145 pp.; paperbound; $2.00 from OEEC Mission Publications Office, 2002 P St., N.W., Washington 6, D.C.*

This report—or rather pair of reports—represents the impressions of two visiting teams of European experts of American water supply and sewage disposal methods. The visitors are wonderfully polite and complimentary, but in the water supply report, at least, they are not greatly impressed, observing that they have little to learn in the handling of the older, standard hydrologic, hydraulic, and treatment methods. They were interested in new methods—rapid treatment processes, automation, taste and odor control, softening, and, above all, in fluoridation. But they think Americans overdose with chlorine, indicating that Europeans prefer less "sterility" if accompanied by less taste or odor. The water supply team also seemed struck by the higher per capita consumption of water in America, although their connection of this factor with a comment on the American habit of drinking ice water would indicate that in some areas, at least, they found it easier to explain us in terms of Hollywood-type cliches than to use their opportunities for investigation and direct observation. On the whole, however, the visiting teams saw things pretty clearly, and in their critical comments have much to offer to the less complacent among us.

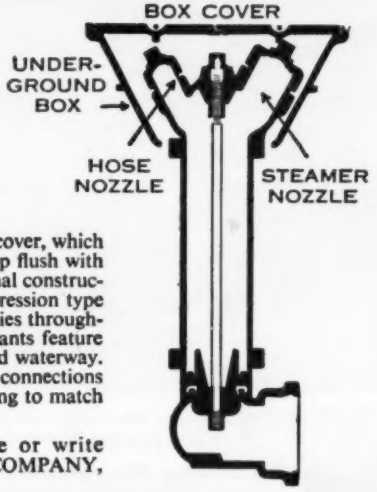
Manual on Industrial Water. *Special Technical Pub. 148-A, American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa. (2nd printing, 1954) 420 pp.; $5*

Although called a second printing rather than a second edition of the book reviewed in these pages some time ago (*see* July 1953 JOURNAL, p. 50 P&R), this manual really rates as a new edition, as it contains a number of new and revised analytical methods.

Recommended Minimum Standard for Commercial Carbon Steel Castings. *Steel Founders' Society of America, 920 Midland Bldg., Cleveland 15, Ohio (1954) 2 pp.; paperbound; free*

A producer standard suggested for use when no definite customer specification is given, this document applies to the "readily weldable grade" commercial carbon steel castings.

(*Continued on page 44 P&R*)



This M & H Hydrant sets completely underground. The cast iron box cover is on line with the ground level, thus completely eliminating any interference with traffic. M & H flush type hydrants are especially designed for use at airports servicing the heaviest modern airplanes.

The operating nut and nozzles are accessible simply by lifting the two piece cover, which has disappearing handles designed to drop flush with the cover when not in use. Hydrant internal construction is exactly the same as M & H compression type fire hydrants used by so many municipalities throughout the country. M & H flush type hydrants feature a 5¼" valve opening and an unobstructed waterway. Can be supplied with one or two fire hose connections and/or with steamer nozzle, with threading to match existing standards.

For additional information, wire or write M & H VALVE AND FITTINGS COMPANY, ANNISTON, ALABAMA.

M&H PRODUCTS FOR WATER WORKS • FILTER PLANTS INDUSTRY • SEWAGE DISPOSAL AND FIRE PROTECTION

The Reading Meter

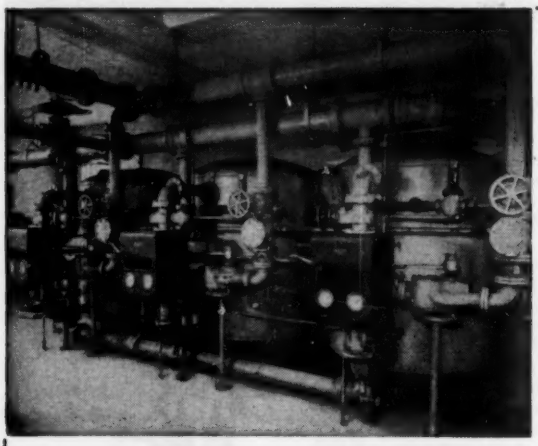
(Continued from page 42 P&R)

Utilization of Saline Water: *Reviews of research on problems. No. IV in Arid Zone Programme. United Nations Educational, Scientific, and Cultural Organization (UNESCO), Paris (1954) 91 pp.; paperbound; $1.75 from Columbia University Press, 2960 Broadway, New York 27, N.Y.*

Three significant papers constitute this addition to the Arid Zone series of publications. Georges Grillot discusses the limitations placed on the use of saline waters for irrigation by salt tolerances in plant biology; H. E. Hayward describes plant growth under saline conditions; and Everett D. Howe discusses the technical and economic aspects of the utilization of sea water. The bibliographies are exceptionally full.

Community Water Supplies—Inventory and Adequacy. *Walter L. Picton. Water & Sewage Industry & Utilities Div., Business & Defense Services Administration; and Area Development Div.; Office of Technical Services, Dept. of Commerce, Washington, D.C. (1954) 20 pp.; paperbound; 25¢ from Dept. of Commerce, Washington 25, D.C.*

The data on the adequacy of water supplies serving communities of over 25,000 population were assembled as a necessary defense measure, in order to gage the necessity for new construction projects and guide water-using defense industries. The report tabulates the amount of storage, safe yield of source, pumping capacity, average output, and other statistics on the communities covered.



WATER PROBLEM?

Photo on left shows a typical H & T fully automatic, municipal, zeolite water softening plant producing clear, iron free, soft water.

Operation of this automatic water treatment plant is by our electrically operated *poppet* type multiport valves—the valves which provide unequalled performance.

If you have a water problem of any size or type—write us. With over 50 years of experience—conditioning water—We Can Help You

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. . . by protecting pipelines with Bitumastic® 70-B Enamel

● There are two ways to buy steel pipe for large-diameter water lines. One method is expensive—the other economical. You can buy *over-sized* pipe to allow for future loss in flow capacity caused by tuberculation and incrustation . . . or you can buy *smaller* pipe solely on the basis of desired capacity and then prevent "shrinkage" by using Bitumastic 70-B Enamel.

Flow capacity *stays* high when a spun lining of Bitumastic 70-B Enamel protects interior surfaces against rust, corrosion, incrustation and tuberculation Flow tests, conducted on steel pipelines, centrifugally lined with hot Bitumastic 70-B Enamel, have shown the value of Hazen-Williams coefficient "C"=145 to 170—the average being 155.

On wall thickness, too, you can save on steel by using Bitumastic 70-B Enamel. Applied to a thickness of approximately $\frac{3}{32}$", this durable enamel protects the exterior of pipe against the corrosive action of the soil. There's no need to specify an excess of wall thickness to compensate for corrosion. Just specify enough wall thickness to give the pipe adequate structural strength and then use Bitumastic 70-B Enamel to prevent corrosion.

Use strong, durable steel pipe, lined and coated with Bitumastic 70-B Enamel. It's a good combination—an economical combination. Write for full information.

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KOPPERS COMPANY, INC.

Tar Products Division, Dept. 1205-T, Pittsburgh 19, Pennsylvania

DISTRICT OFFICES: BOSTON, CHICAGO, LOS ANGELES, NEW YORK, PITTSBURGH, AND WOODWARD, ALA.

CHANGES IN MEMBERSHIP

NEW MEMBERS

Applications received Oct. 1–31, 1954

Alsman, Anthony; *see* Dugger (Ind.) Utilities

Alterton, Elmer D., Owner, Backflow Testing & Maintenance Co., Box 545, Hermosa Beach, Calif. (Oct. '54) *MRPD*

Anderson, John E., Sr. Engr., Metropolitan Water Dist. of Southern California, 306 W. 3rd St., Los Angeles 13, Calif. (Oct. '54) *D*

Bahlmann, Erwin H., Foreman, Water Dept., 6550 Miles Ave., Huntington Park, Calif. (Oct. '54) *MRPD*

Bargersville Water Works, Leo Vandivier, Supt., Bargersville, Ind. (Munic. Sv. Sub. Oct. '54)

Bass, Ben A., Vice-Pres., Apple Valley Ranchos Water Co., Box 1, Apple Valley, Calif. (Oct. '54) *MD*

Bernardo, R. L., Jr., Vice-Pres., R. L. Bernardo & Son, Inc., 1089 Galloway, Memphis, Tenn. (Oct. '54) *D*

Billings, Carl H., Instructor, School of Eng., San. Eng. Div., Texas Western College, Univ. of Texas, College Ave., El Paso, Tex. (Oct. '54)

Blackhurst, David S., Eng. Aid, Metropolitan Water Dist. of Southern California, 306 W. 3rd St., Los Angeles 13, Calif. (Oct. '54) *D*

Bradley, James P., Pres., Dominguez Water Corp., 5410 Wilshire Blvd., Los Angeles 36, Calif. (Oct. '54) *MRPD*

Bretz, Robert W., Sales Repr., East Jordan Iron Works, Inc., 12815 Eaton Ave., Detroit 27, Mich. (Oct. '54) *D*

Bridges, Ira W., Supt., Water Dept., Litchfield, Ill. (Oct. '54) *MD*

Brittain, Sydney, Supt., Water Dept., 229 Cypress Ave., San Bruno, Calif. (Oct. '54) *MD*

Brodbeck, Chester, Supt., Water Works, Monroe, La. (Oct. '54) *MD*

Brown, George E., Sr. Draftsman, Metropolitan Water Dist. of Southern California, 306 W. 3rd St., Los Angeles 13, Calif. (Oct. '54) *R*

Brown, William B., Field Engr., Fischer & Porter Co., 4312 Old Brook Rd., Richmond, Va. (Oct. '54) *P*

Bruce, Clarence E., Civ. Eng. Draftsman, Dept. of Water & Power, Rm. 826, 207 S. Broadway, Los Angeles 12, Calif. (Oct. '54) *RPD*

Buckley, Robert J., Engr., National Tank Maintenance Corp., 1617 Crocker St., Des Moines, Iowa (Oct. '54) *M*

Burall, Robert C., Field Supt., Water Distr., Dept. of Water & Power, 410 Ducommon St., Los Angeles, Calif. (Oct. '54) *D*

Burgess, Charles W., Supt., Light & Water, 34 W. State St., Niles, Ohio (Oct. '54) *MD*

Byal, Arthur P., Pres. & Gen. Mgr., North Beach Water Co., 101 Orange Ave., Fort Pierce, Fla. (Oct. '54) *D*

Cagle, J. Hollis, Director of Public Works, City Hall, Childress, Tex. (Oct. '54) *M*

Calgary Waterworks Dept., A. H. Nicolson, Engr., City Hall Annex, Calgary, Alta. (Corp. M. Jan. '54) *MPD*

Carson, J. V.; *see* Dominguez Water Corp.

Cason, Carroll C., Survey Party Chief, Public Service Board, Munic. Water & Sewer System, El Paso, Tex. (Oct. '54)

Cisco, Herbert D., San. Chemist, Springwells Filtration Plant, Detroit Dept. of Water Supply, 8300 W. Warren Ave., Dearborn, Mich. (Oct. '54) *MRPD*

Clary, Robert B., Partner, Clary Eng. Co., Box 222, Lyons, Kan. (Oct. '54) *D*

Clymer, Lyle T., City Engr., Tipton, Ind. (Oct. '54)

Coffey, G. W., City Mgr., Box 317, Costa Mesa, Calif. (Oct. '54) *M*

Crawford, Charles M., Gen. Mgr., Dominguez Water Corp., 5410 Wilshire Blvd., Los Angeles 36, Calif. (Oct. '54) *MRPD*

Crespo, Harold L., Salesman, Consolidated Chemical Industries, Inc., Box 828, Baton Rouge, La. (Oct. '54) *P*

Crist, Joseph W., Supt., Public Works, 1033 Chelten, Corona, Calif. (Oct. '54) *MRPD*

Crum, Peter B., Supt., Eng. & Estimating, Sam B. Pearce, 13801 S. Central Ave., Los Angeles 59, Calif. (Oct. '54) *RD*

Crutcher, Courtenay N., Supt., Port Wentworth Corp., Box 4098, Port Wentworth, Ga. (Oct. '54) *M*

Cudahy Water Utility, James J. Tiry, Mgr., 3555 E. Pabst Ave., Cudahy, Wis. (Munic. Sv. Sub. Oct. '54) *MP*

Dake, C. W., Salesman, Consolidated Chemical Industries, Inc., Box 1656, Fort Worth, Tex. (Oct. '54) *P*

Davis, Charles L., Engr. Asst., State Health Dept., City Hall, Kerrville, Tex. (Oct. '54) *MP*

Davis, Sam L., Water Supt., Box 354, Crosbyton, Tex. (Oct. '54) *M*

DeHaven Eng. Co., Ralph L. Nessler Jr., 115 N. Pennsylvania St., Indianapolis, Ind. (Assoc. M. Oct. '54)

Dominguez Water Corp., J. V. Carson, Vice-Pres., 21718 S. Alameda St., Long Beach 10, Calif. (Corp. M. Oct. '54) *MRPD*

Dryden, George T. A., Field Supt., Dept. of Water & Power, 14601 Aetna St., Van Nuys, Calif. (Oct. '54) *MD*

Dugger Utilities, Anthony Alsman, Pres., Water Board, Dugger, Ind. (Munic. Sv. Sub. Oct. '54) *MRPD*

Evenstad, S. T.; *see* Rurban Homes Mutual Water Co.

Fayard, Al F., Salesman, Industrial Supply Corp., Box 5116, Tampa, Fla. (Oct. '54) *D*

Finn, John C., New England Sales Agent, US Pipe & Foundry Co., 250 Stuart St., Boston 16, Mass. (Oct. '54) *D*

Folkes, G. C.; *see* Spring Lake (N.C.) Enterprises

Fournier, Gerald, Supt., Water Works, Edmundston, N.B. (Oct. '54)

Fraps, Anton W., Mgr., Boyd E. Phelps, Inc., 805 K. of P. Bldg., Indianapolis, Ind. (Oct. '54) *P*

Freeman, Paul H., Div. Service Mgr., Electro Rust-Proofing Corp., 1112 National City Bldg., Dallas, Tex. (Oct. '54) *M*

Funk, Rex R., Contracting Engr., Consolidated Western Steel Div., US Steel Corp., Box 2015 Terminal Annex, Los Angeles 54, Calif. (Oct. '54) *D*

Gannon, John J., Dist. Engr., State Dept. of Public Health, Bureau of San. Eng., 1978 Dowling Court, Santa Rosa, Calif. (Oct. '54) *PD*

Garrett, Arthur Howard, Salesman, Texas Lime Co., Box 103, Cleburne, Tex. (Oct. '54) *P*

Gauld, M. C., Rubidow & Vista Water System, 18730—13th St., Bloomington, Calif. (Oct. '54) *MD*

Gilbertson, D. P., Field Engr., Automatic Control Co., 995 University Ave., St. Paul, Minn. (Oct. '54) *M*

Goodson, James B., Jr., Sr. Engr., Sheppard T. Powell, 330 N. Charles St., Baltimore 1, Md. (Oct. '54) *P*

Grabania, George, Salesman, Alan A. Wood, Inc., 6230—3rd St., N.W., Washington 11, D.C. (Oct. '54) *P*

Grant, Bill G., Asst. Engr., Marin Munic. Water Dist., 874—4th St., San Rafael, Calif. (Oct. '54) *MPD*

Gray, John, Sales Engr., Byron Jackson Co., 407 S. Dearborn St., Chicago, Ill. (Oct. '54) *R*

Green, Charles, Civ. Eng. Assoc., Los Angeles City Flood Control, Testing Div., 2986 New York Dr., Pasadena 8, Calif. (Oct. '54) *RP*

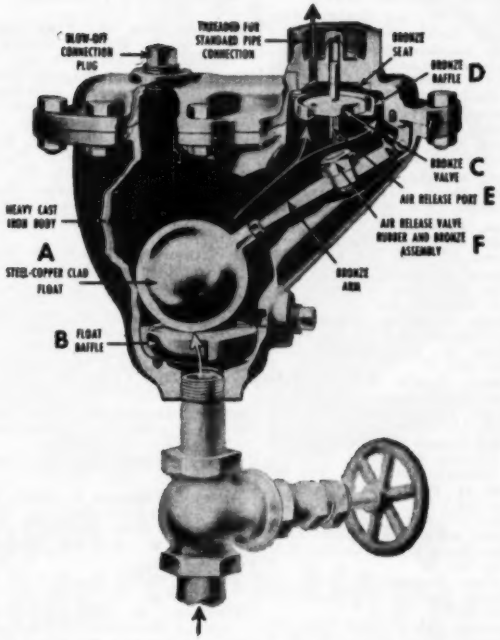
Green, Norman S., Editor, Export Publisher's, 134 E. 59th St., New York 22, N.Y. (Jan. '54)

Grubb, Everett L., Secy.-Mgr., Western Munic. Water Dist. of Riverside County, 3614—9th St., Riverside, Calif. (Oct. '54) *MRPD*

Gulledge, Edward L., Salesman, Grinnell Co., 1431 W. Morehead St., Charlotte, N.C. (Oct. '54) *MD*

(*Continued on page 48 P&R*)

Rensselaer Combined *Air* and *Vacuum* AND *Air Release* VALVES



This Rensselaer valve is used to allow air to escape while the pipe is being filled with water; to allow air to flow into the pipe when it is being emptied of water and to allow accumulated air under pressure to escape at high points of the line.

It is used extensively for water mains, turbine pump discharge, bowls of booster pumps, air tanks and sand traps.

This valve will positively close under low water head, cannot blow shut and allows full and clear passage of air.

It is a combination vent, vacuum and pressure air valve, with all parts built for long and satisfactory service.

It is available in simplified form for air release only. Ask for bulletin No. F. 106C

Rensselaer VALVE CO. TROY, N. Y.

GATE VALVES • FIRE HYDRANTS • SQUARE BOTTOM VALVES • CHECK VALVES • AIR RELEASE VALVES

SALES REPRESENTATIVES IN PRINCIPAL CITIES

(*Continued from page 46 P&R*)

Haney, C. G., Supt. of Filtration, Box 3206 Univ. Sta., Charlottesville, Va. (Oct. '54) *MRPD*

Heard, C. M.; *see* Rowland Area County (Calif.) Water Dist.

Heard, Gordon E., Dist. Engr., Southern California Water Co., 11911 S. Vermont Ave., Los Angeles 44, Calif. (Oct. '54) *D*

Hedrick, Andrew J., Sales Repr., Keasbey & Mattison Co., 1319 Azalea Dr., Jacksonville 5, Fla. (Oct. '54) *M*

Jarvis, William Morley, Engr., Water Dept., 3854 Mulberry St., Riverside, Calif. (Oct. '54) *D*

Jensen, Clifford R., Asst. Supt., Production, Munic. Water & Sewer System, El Paso, Tex. (Oct. '54)

Johnson, Dudley J., Sr. Sanitarian, State Dept. of Health, City Hall, Kerrville, Tex. (Oct. '54) *P*

Johnson, Karl A., Water Pollution Control Board No. 4, 541 S. Spring St., Los Angeles, Calif. (Oct. '54) *P*

Johnson, Lewis H., Jr., Sales Engr., B-I-F Texas Inc., 4520 N. Central Expressway, Dallas, Tex. (Oct. '54) *MP*

Kuehn, Ewald George, Supervisor of Utilities, Rio Farms, Inc., Rte. 1, Edcouch, Tex. (Oct. '54) *MP*

Lance, O. Paul, Lance Eng. Co., Box 3247, Sta. A, El Paso, Tex. (Oct. '54) *R*

Landis, Joseph F., Mech. Engr., White Sands Proving Ground, N.M. (Oct. '54) *M*

La Fon, Donald E., Supt., La Mirada Water Co., La Mirada, Calif. (Oct. '54) *M*

Lawrence, Alex, Office Mgr., Dominguez Water Corp., 21718 S. Alameda St., Long Beach 10, Calif. (Oct. '54) *M*

Lee, Robert E., Business Mgr., Taft State Hospital, Taft, Okla. (Oct. '54) *MP*

Levy, Harold C., Asst. Civ. Engr., Water Dept., 215 W. Broadway, Long Beach, Calif. (Oct. '54) *MR*

Lin, Ping-Wha, Designer, Ammann & Whitney, 76—9th Ave., New York, N.Y. (Oct. '54) *P*

Lingle, Charles K., Gen. Mgr., Petal Water & Sewer Co., Inc., Petal, Miss. (Oct. '54) *MRD*

Loftus, Edward Winfield, Asst. Supt., Sunshine Water Co., 11725 Carmenita Rd., Whittier, Calif. (Oct. '54) *MD*

Lo Pinto, Victor J., Civ. Engr., 58 Branchport Ave., Long Branch, N.J. (Oct. '54) *RPD*

Luna, George, Civ. Eng. Asst., Dept. of Water & Power, Box 3669 Terminal Annex, Los Angeles 54, Calif. (Oct. '54) *D*

Main, Sam W., Asst. Director, Bureau of Sanitation, Jefferson County Board of Health, Box 2591, Birmingham, Ala. (Oct. '54) *P*

Mantle, Robert, Shop Supt., City of Vernon, Vernon, Calif. (Oct. '54) *MRPD*

Mart, Robert A., Supt., Water Works, Converse, Ind. (Oct. '54) *MPD*

McGarvey, Francis X., Chem. Eng., Rohm & Haas Co., 5000 Richmond St., Philadelphia, Pa. (Oct. '54) *P*

McGrath, Dan N., Eng. Draftsman, Munic. Water & Sewer System, El Paso, Tex. (Oct. '54)

McGurk, Samuel Rogers, Director, Div. of San. Eng., State Board of Health, 1330 W. Michigan St., Indianapolis, Ind. (Oct. '54)

McIndoe, R. W., Exec. Asst. Mgr., B-I-F Texas Inc., 4118 Fannin St., Houston, Tex. (Oct. '54) *P*

McKay, James F., Constr. Engr., Dominguez Water Corp., 21718 S. Alameda St., Long Beach 10, Calif. (Oct. '54) *MRPD*

Merrithew, William S., Sr. Engr., Metropolitan Water Dist. of Southern California, 306 W. 3rd St., Los Angeles 13, Calif. (Oct. '54)

Metzgar, Joseph H., Sales Mgr., De Laval Steam Turbine Co., Trenton 2, N.J. (Oct. '54)

Meyers, LeRoy E., Salesman, Valves Inc., 1260 W. 5th St., Pomona, Calif. (Oct. '54) *D*

Miller, Clarence W., Mfgrs. Repr., 204 N. 3rd St., Marshalltown, Iowa (Oct. '54) *RPD*

Mowry, Robert P., San. Engr., Salem, Va. (Oct. '54) *P*

Murphy, Clarence L., Supt., Water Works, 221—3rd St., N.E., Hampton, Iowa (Oct. '54)

Nelson, E. J.; *see* Tecumseh (Mich.)

Nessler, Ralph L., Jr.; *see* DeHaven Eng. Co.

Nicolson, A. H.; *see* Calgary (Alta.) Waterworks Dept.

Oberer, George R., Pres., Oberer Construction Co., 441 E. Siebenthaler Ave., Dayton, Ohio (Oct. '54) *D*

Ochs, Edwin A., Supt., Surf City Water Co., 1514 Sunset Ave., Surf City, N.J. (Oct. '54) *MPD*

O'Connell, Robert F., Sales Engr., The Permutit Co., 3903 Olive St., St. Louis 8, Mo. (Oct. '54) *P*

Oelkers, George F., Supt., Light, Power & Water, 222 N. Lemon St., Anaheim, Calif. (Oct. '54) *MRPD*

Ost, John Howard, Sr., Maint. Mechanic, Metropolitan Water Dist. of Southern California, 306 W. 3rd St., Los Angeles 13, Calif. (Oct. '54) *MRPD*

Palmdale Irrigation Dist., Murray D. Pond, Mgr., 816 E. Ave. Q-7, Palmdale, Calif. (Munic. Sv. Sub. Oct. '54) *RPD*

Parks, Mack A., Supt. of Filtration, Water Works, Ellijay, Ga. (Oct. '54) *P*

Pate, Thomas S., Utilities Foreman, White Sands Proving Ground, N.M. (Oct. '54) *M*

Phelps, Thurman, Supt. of Filtration, Water Works, Providence, Ky. (Oct. '54) *P*

Pickens, Lavant A., Supt., Water Dept., Hart, Mich. (Oct. '54) *MD*

Pond, Murray D.; *see* Palmdale (Calif.) Irrigation Dist.

Powell, John L., Mech. Foreman, Metropolitan Water Dist. of Southern California, Box 38, La Verne, Calif. (Oct. '54) *P*

Redar, Peter G., Supt., Water Works, Schererville, Ind. (Oct. '54) *MRPD*

Reedy, Donald R., Chemist, Metropolitan Water Dist. of Southern California, Box 38, La Verne, Calif. (Oct. '54) *P*

Register, Alton A., Cons. Engr., Alton A. Register & Assocs., 204 Peacock Bldg., Fort Pierce, Fla. (Oct. '54) *RPD*

Reid, George W., Assoc. Prof., Civ. Eng., Univ. of Oklahoma, Norman, Oklahoma (Oct. '54) *R*

Remsburg, Brent; *see* South Boston (Va.)

Renaud, John B., Supt. of Water & Sewerage, 114 Stone Ave., Monroe, La. (Oct. '54) *D*

Reynolds, Eugene V., Supt., Transportation, Metropolitan Water Dist. of Southern California, 306 W. 3rd St., Los Angeles 13, Calif. (Oct. '54) *D*

Robinson, George J., Asst. Chief Engr., National Board of Fire Underwriters, 85 John St., New York, N.Y. (Oct. '54) *RD*

Rockwell, Edward W., Chief Elec. Engr., Metropolitan Water Dist. of Southern California, 306 W. 3rd St., Los Angeles 13, Calif. (Oct. '54) *MRPD*

Rowland Area County Water Dist., C. M. Heard, Gen. Mgr., 18033 Valley Blvd., Puente, Calif. (Corp. M. Oct. '54) *MRPD*

Rurban Homes Mutual Water Co., S. T. Evenstad, Pres., Board of Directors, 11814 E. The Wye, El Monte, Calif. (Corp. M. Oct. '54) *MRPD*

Sawyer, Richard M., Engr. in Charge, US Geological Survey, Surface Water Branch, 230 Old Country Rd., Mineola, N.Y. (Oct. '54) *R*

Schulke, Russell E., Sales Repr., US Pipe & Foundry Co., 907 Monadnock Blvd., San Francisco, Calif. (Oct. '54) *D*

Scotland Neck, Town of, S. R. Williams, Supt., Water Dept., Scotland Neck, N.C. (Corp. M. Oct. '54) *M*

Sears, H. M., Sales Engr., Christy Firebrick Co., 1501 Nantucket Dr., Houston 19, Tex. (Oct. '54) *P*

Silliman, Frederick B., Vice-Pres., Bridgeport Hydraulic Co., 835 Main St., Bridgeport, Conn. (Oct. '54) *MRPD*

Smith, David H., Chemist, Metropolitan Water Dist. of Southern California, Box 38, La Verne, Calif. (Oct. '54) *MP*

Smith, George W., Office Engr., Dominguez Water Corp., 21718 S. Alameda St., Long Beach 10, Calif. (Oct. '54) *M*

Smith, Leo D., Supt., Water Dept., 145 S. Riverside Ave., Rialto, Calif. (Oct. '54) *MD*

Smith, Ralph E., Geologist, US Geological Survey, Ground Water Branch, Box 6562, Fort Bliss, El Paso, Tex. (Oct. '54) *R*

(*Continued on page 50 P&R*)

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Soper, Douglas E., Gen. Mgr., El Paso Water Control & Improvement Dist. No. 1, Ysleta, Tex. (Oct. '54) *M*

South Boston, Town of, Brent Remsburg, Town Engr., Munic. Bldg., Box 385, South Boston, Va. (Corp. M. Oct. '54)

Spring Lake Enterprises, Inc., G. C. Folkes, Gen. Mgr., Box 22, Spring Lake, N.C. (Corp. M. Oct. '54) *M*

Stovell, John, City Engr., Alpine, Tex. (Oct. '54) *MR*

Strand, Arthur G., Asst. Supt., Water Dept., 129 N. 2nd St., Yakima, Wash. (Oct. '54) *MRPD*

Sundstrom, R. W., Dist. Engr., Ground Water Branch, US Geological Survey, 302 W. 15th St., Austin, Tex. (Oct. '54) *R*

Taft State Hospital, Robert E. Lee, Business Mgr., Taft, Okla. (Corp. M. Oct. '54) *MP*

Tank, Vrajlal D., Asst. Engr., Public Health Circle, Dist. San. Subdiv., Govt. of Bombay State, Poona 1, India (Oct. '54) *P*

Tarrant, William J., Chemist, Water Filtration Plant, Saginaw, Mich. (Oct. '54) *MRP*

Tatlock, Marion L., Chief Engr., Muscatatuck State School, Butlerville, Ind. (Oct. '54) *M*

Tecumseh, City of, E. J. Nelson, City Mgr., 114 S. Evans St., Tecumseh, Mich. (Munic. Sv. Sub. Oct. '54) *MRPD*

Thomas, Clyde E., Supt., Water Works, Walton, Ind. (July '54) *M*

Tiner, J. B., Plant Mgr., Consolidated Chemical Industries, Inc., Box 551, Bastrop, La. (Oct. '54) *MP*

Tiry, James J.; *see* Cudahy (Wis.) Water Utility

Tuepker, Jonathan L., Engr., St. Louis County Water Co., 6600 Delmar Blvd., University City 5, Mo. (Oct. '54) *P*

Valchuk, Alexander, Asst. Branch Mgr., Byron Jackson Co., 580—5th Ave., New York 36, N.Y. (Oct. '54) *D*

Vandivier, Leo; *see* Bargersville (Ind.) Water Works

Van Fossen, Thomas L., Dist. Engr., Barnard & Burks, Box 833, Monroe, La. (Oct. '54) *PD*

Wallace, Campbell, Partner, Campbell Wallace Consulting Engrs., 805½ Locust St., Knoxville, Tenn. (Oct. '54)

Wallace, Campbell, Jr., Partner, Campbell Wallace Consulting Engrs., 805½ Locust St., Knoxville, Tenn. (Oct. '54) *RP*

Weathersbee, Ely J., Assoc. San. Engr., State Board of Health, Civ. Eng. Dept., Apperson Hall, Oregon State College, Corvallis, Ore. (Oct. '54) *MRPD*

Webb, Albert A.; *see* Webb, Albert A., Assocs.

Webb, Albert A., Assocs., Albert A. Webb, Pres., 3788 McCray St., Los Angeles, Calif. (Corp. M. Oct. '54) *RD*

Weickart, Richard F., Asst. Tech. Director, Culligan, Inc., S. Shermer Rd., Northbrook, Ill. (Oct. '54) *P*

Wigley, Robert J., Sales Repr., Neptune Meter Co., 1007 N. 2nd St., Aberdeen, S.D. (Oct. '54) *M*

Wilkes, Kenneth G., Engr., Dept. of Water & Power, Box 3669 Terminal Annex, Los Angeles 54, Calif. (Oct. '54) *MD*

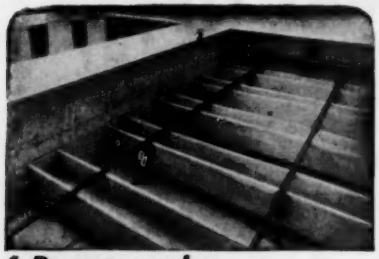
Willard, Aubrey L., Assoc. Engr., State Dept. of Public Health, Box 711, Santa Fe, N.M. (Oct. '54) *RP*

Williams, S. B.; *see* Scotland Neck (N.C.)

Willson, Weaver E., Partner, Central Steel Tank Co., 1402 E. Vilas, Guthrie, Okla. (Oct. '54)

Winn, W. P., Sr. Engr., Metropolitan Water Dist. of Southern California, 306 W. 3rd St., Los Angeles 13, Calif. (Oct. '54) *D*

Zimmer, Edward J. L., Director, Dept. of Water & Sewers, Bureau of Water, Water Distr. Div., 765 W. Cabrini St., Chicago 7, Ill. (Oct. '54)



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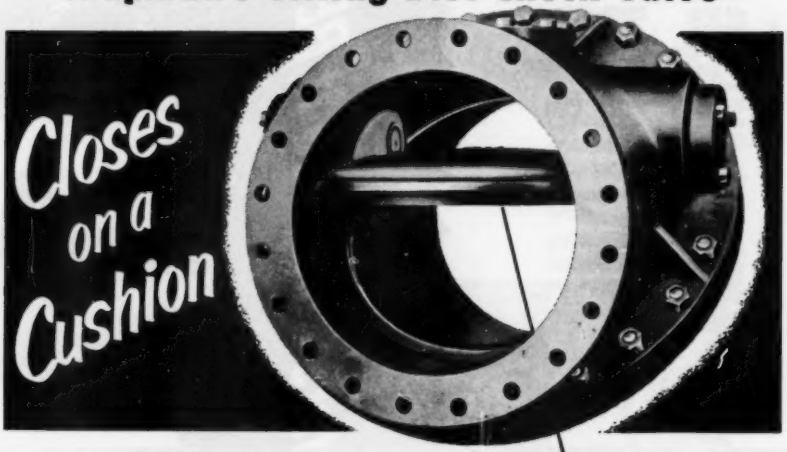

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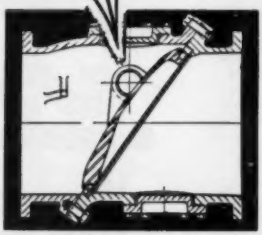

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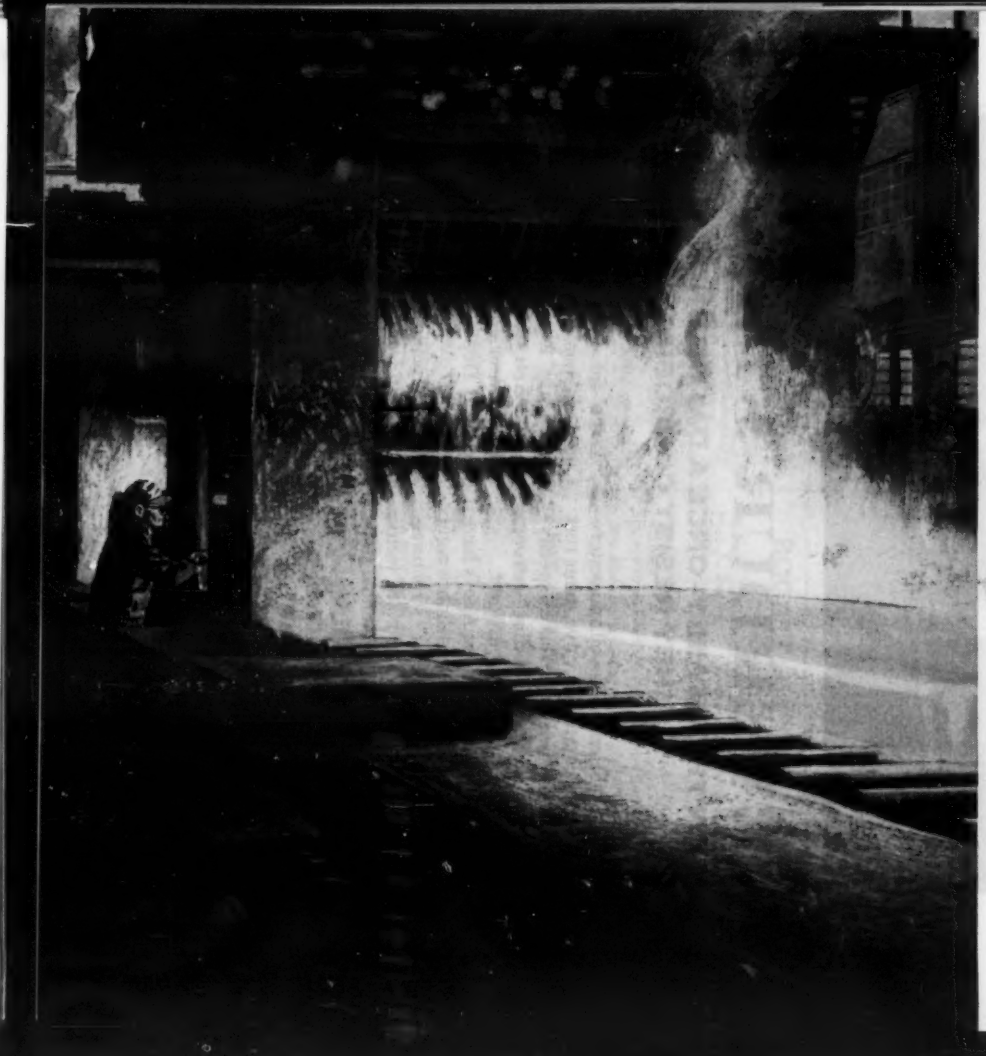

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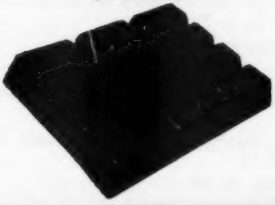

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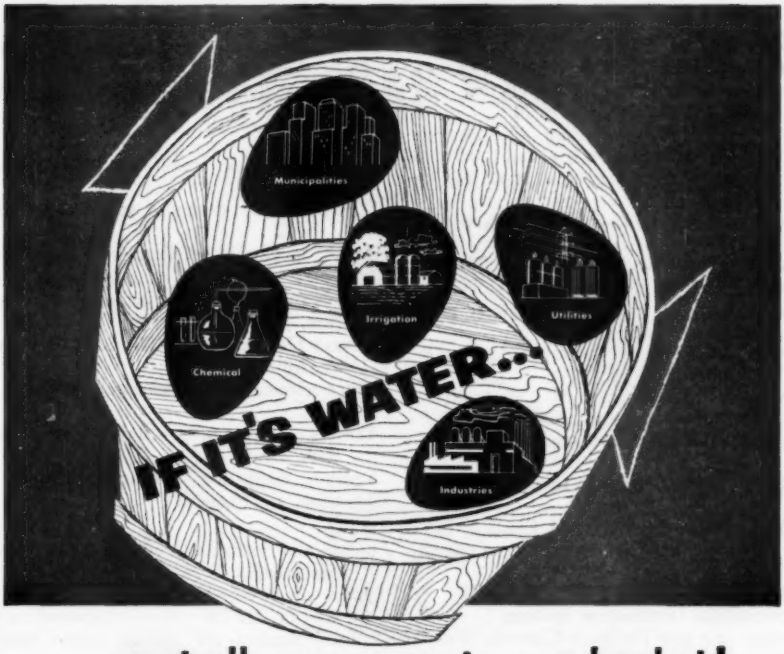

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Pipe Line Equipment
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Bottled Gas Lead Melting Furnace

Asbestos Joint Runners

Best quality asbestos rope, brass caps attached to each end. Equipped with clamps.

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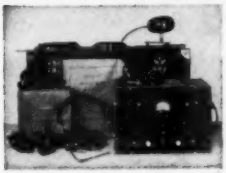

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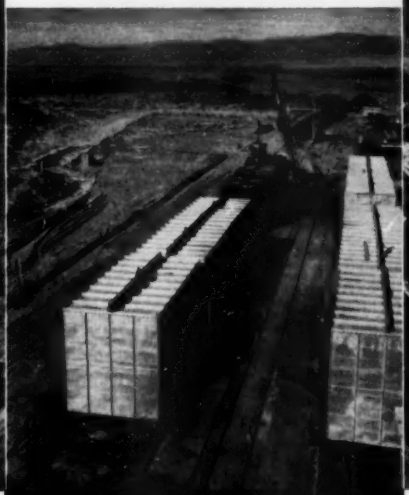

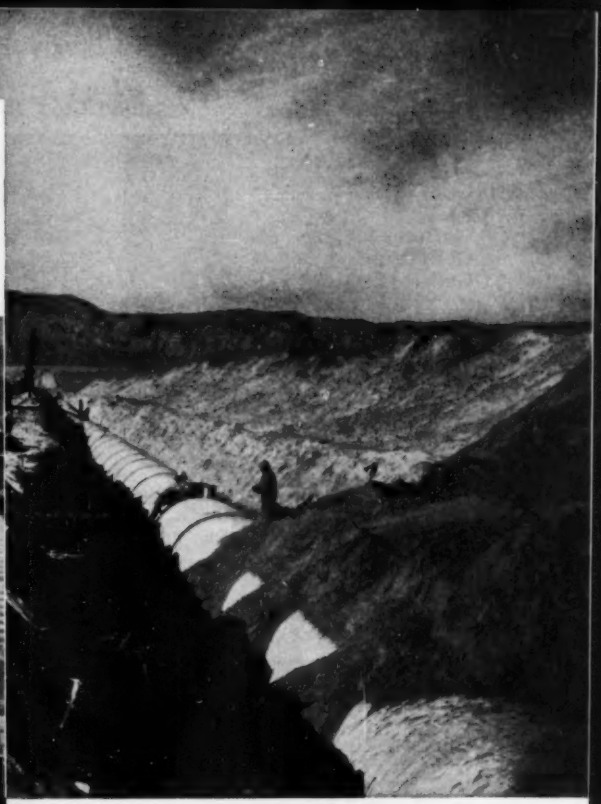

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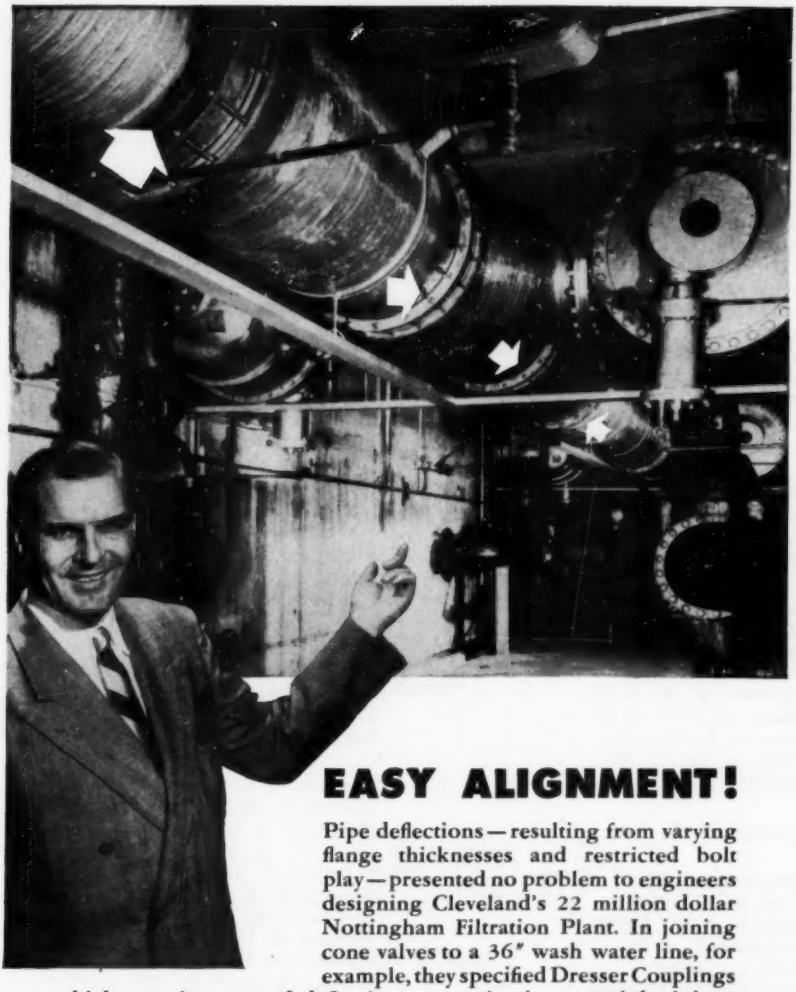

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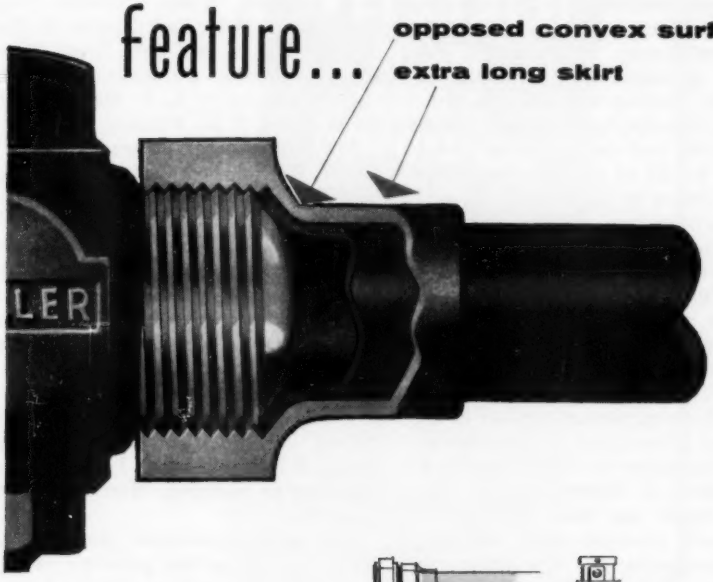

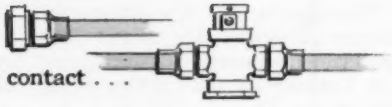

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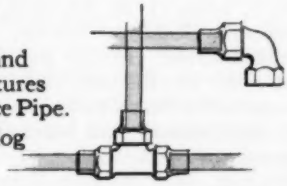

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Section Meetings

Minnesota Section: The 38th Conference of the Minnesota Section was held in the Hotel Lowry, St. Paul, Oct. 6–8, with 206 in attendance, including 27 ladies. The meeting was called to order Wednesday morning by Chairman George J. Schroepfer, and the membership welcomed on behalf of the city by Mayor Joseph E. Dillon of St. Paul.

The morning session was completed with a paper on "The Coagulation of Raw Water" by F. Robert MacGonagle of the Philadelphia Quartz Co. The Wednesday afternoon session with Clarence H. Nelson and Ross A. Thuma presiding heard two papers: "Safety in Water Works Construction and Operation" by W. C. Lathrop, senior engineer of the Minneapolis Water Dept., and "Construction and Operation of Filters" by G. R. Scott of Black & Veatch, Kansas City, Mo. A report was also presented by C. M. Bach, superintendent, Softening Plant, Minneapolis, on "The Minnesota Certification Program for Water and Sewage Plant Operators."

M. D. Lubratovich and Carl A. Flack presided at the Thursday morning session, at which G. M. Schwartz, director, Minnesota Geological Survey, discussed "Ground Water Geology and Conservation"; W. H. Bischoff, district service manager, The Flox Co., discussed "Chemical Stabilization"; and James G. Filicky, research chemist, Industrial Chemical Sales Div., West Virginia Pulp & Paper Co., Tyrone, Pa., gave a paper on "Taste and Odor Control." The afternoon program was devoted to a Round Table Discussion of "Problems in Small Town Water Works" with Harold M. Johnson, chief operator, Water Treatment Plant, Thief River Falls, and Charles E. Carl, director, Div. of San. Eng., South Dakota Dept. of Health, presiding. Floor discussion was led by L. P. Steiling, A. C. Borgen, and R. E. Frazier.

The Friday program, presided over by Edgar W. Johnson, water works engineer, Minneapolis, and Arthur T. Hanson, chief engineer, Water Dept., Sioux Falls, S.D., featured a paper on the "Development of and Experience in the Operation of Suspended Solids Contact Basins" by H. H. Behlmer, superintendent of water, Fargo, N.D., followed by a panel discussion on the "Care and Maintenance of Pumps" in which Ira Vraalstad, superintendent of water, St. Louis Park, R. M. Jenson, superintendent of water, Grand Forks, N.D., and George J. Poole, superintendent of pumping, Minneapolis, participated.

The entire convention program was judged one of the best presented in many years and generated considerable interest. All sessions were exceptionally well attended. At the annual business session, reports of all officers and committee chairmen were presented. AWWA President Maffitt addressed the members at the business meeting.

The membership voted to request a change in the section name from the "Minnesota Section" to the "North Central Section" as more properly descriptive of the area embraced, which includes not just Minnesota but also North and South Dakota. A second proposed amendment to the by-laws was approved, which would increase the Executive Board by the addition of one trustee to be elected from the

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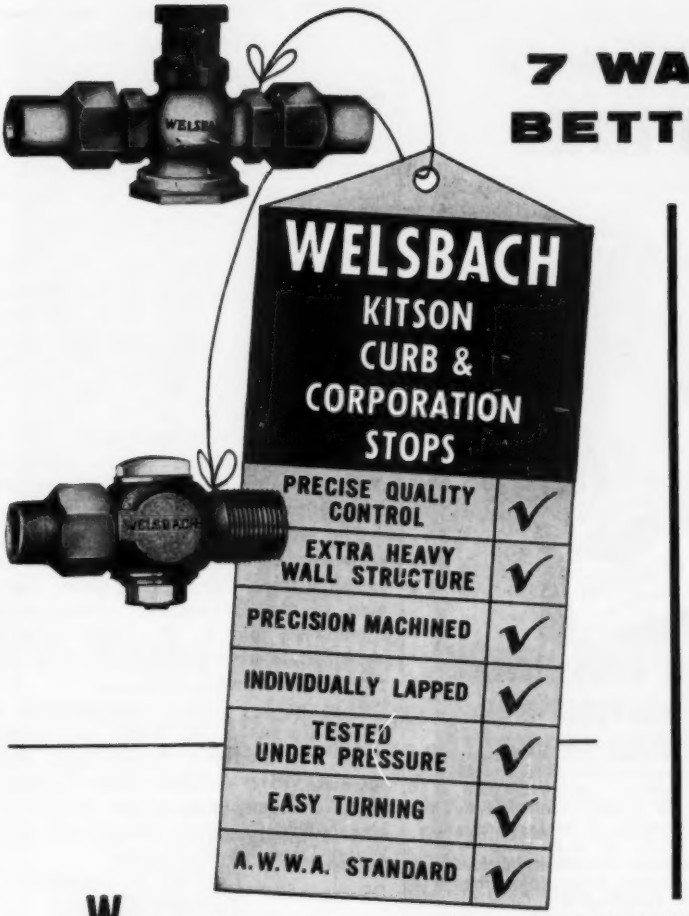

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Section Meetings

(*Continued from page 78 P&R*)

manufacturers' sales representatives in the section.

The convention closed Friday evening with the Annual Banquet, followed by a most delightful entertainment and the presentation of awards. The Past-Chairman's Pin was presented to Mr. Schroepfer as retiring chairman, the Fuller Award to Herbert S. Grove, General Manager of the Water Dept., Stillwater, Minn., "for his years of efficient operation of that city's water system and his deep interest in the Section and the Water Works School," and the Finch Section Award to William Yegen, superintendent of filtration plant, Bismarck, N.D., "for his competent administration and leadership in affairs of the Section."

The ladies attending were entertained with a bridge luncheon, tea and two inspection trips. Dean E. Colvin, chairman of the Convention Arrangements Committee, and L. H. Coult, program chairman, were acclaimed for their fine efforts and results.

Howard J. Sowden, superintendent of water, Fergus Falls, Minn., was elected as the new chairman; L. H. Coult, chief chemist, Water & Light Com., Fairmont, Minn., vice-chairman; and Arthur T. Hanson, chief engineer, Sioux Falls, S.D., Water Dept., as new trustee.

LEONARD N. THOMPSON
Secretary-Treasurer

Iowa Section: The Iowa Section's annual meeting, held at Cedar Rapids, Oct. 13–15, was, according to everyone's opinion, the best meeting since the reorganization meeting in 1946. Of the 191 registered, 61 were members, 68 were manufacturers' representatives, 39 were ladies, and 23 were guests. Forty cities of the state were represented.

On Wednesday afternoon, T. W. Thorpe of the Thorpe Well Co. ably outlined the water resources problems of

(*Continued on page 82 P&R*)

THIS WATER PIPE
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With water lines of Armco Welded Steel Pipe, the inside diameter ***stays the same.*** A durable spun enamel lining prevents encrustation and tuberculation, assuring continuing high flow capacity. Pumping costs stay low. You save too, because you don't need to buy "oversize" pipe that allows for reduction in capacity.

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Meets AWWA Specifications

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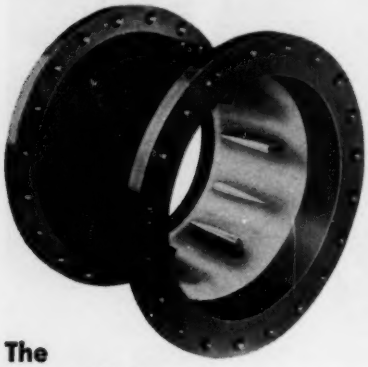

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ACCURACY... Differential is produced from points of equal cross-sectional area. Furnished with head capacity curves, and guaranteed for exceptional accuracy when used with any standard indicating, recording or integrating meter.

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Section Meetings

(*Continued from page 80 P&R*)

the state. Then G. H. Hershey discussed these problems from the viewpoint of a geologist, Paul Houser offered the public health viewpoint, and Robert Smith outlined the duties of the Iowa Resources Council. All these speakers emphasized the fact that sooner or later the Iowa Legislature must enact adequate laws to control and conserve the state's water resources.

On Thursday morning Frank C. Amsbary, AWWA vice-president, discussed air conditioning demands upon water utilities. Charles Mullinex of the Green Eng. Co. answered with a qualified affirmative the question, "Are *ad Valorem* Taxes Justified to Aid Water Department Financing?" George Ahrens ably discussed "Water Works and City Planning."

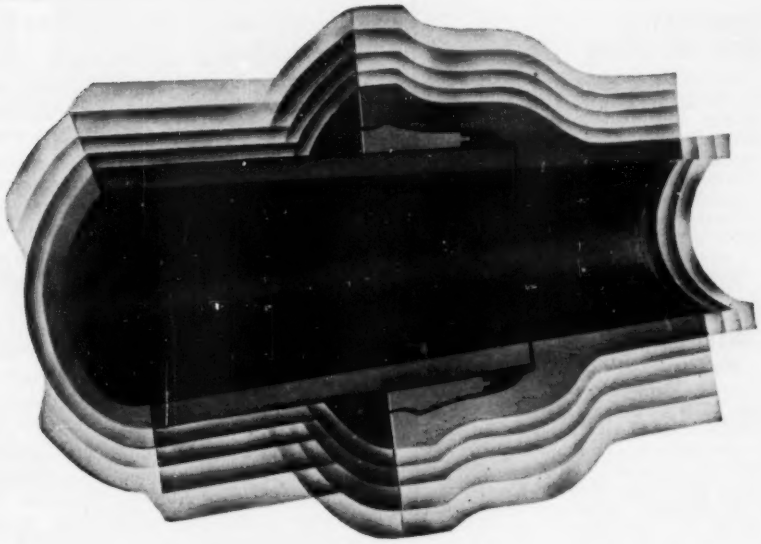
Two hundred enjoyed a wonderful banquet and listened to the address by AWWA President Dale Maffitt. During the business session, after listening to the various committee reports, the following 1955 section officers were elected: chairman, T. W. Thorpe; first vice-chairman, Donald R. Bragg; second vice-chairman, Prof. Philip Morgan; and secretary-treasurer, H. V. Pedersen.

On Friday morning the Question Box was opened by Joe J. Hail and a lively discussion followed. Everyone went home with a feeling that 1955 will be a banner year and that the membership will increase.

H. V. Pedersen
Secretary-Treasurer

Ohio Section: The 16th annual Ohio Section Conference was held this year in Dayton at the Dayton Biltmore Hotel, Sept. 22–24. Two tours were planned Wednesday morning, for those arriving early, to visit either the Price Brothers Co. concrete pressure pipe plant or the new Dayton filtration and softening plant. Both trips were well attended and found to be most interesting.

(*Continued on page 84 P&R*)



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Section Meetings

(*Continued from page 82 P&R*)

When general sessions began Wednesday afternoon, the registration record showed 304 members and guests plus 90 ladies in attendance—the largest total in section history.

Herbert W. Starick, city manager of Dayton, opened the conference with a hearty welcome to all of the water works men. Chairman Ervin Leist presided during the afternoon. Lloyd Huffman, director, Dayton Dept. of Water, discussed "The Dayton Water Supply." The program continued with: "Public Relations, an Opportunity for Your Water Dept.," by A. O. Putnam, director of public relations, Layne & Bowler, Inc., Memphis, Tenn.; "Detergents, Their Effect on Water Treatment," by Russell S. Smith, Graham Walton Sr., and Jesse Cohen of the Robert A. Taft Sanitary Engineering Center, Cincinnati. A panel discussion on "Main Extensions to Fringe Areas and New Subdivisions" was presented by W. R. Bowman, superintendent, Water and Sewage, Newark; G. J. VanDorp, chief engineer, Div. of Water, Toledo; Pierce Bailey, general superintendent, Ohio Water Service Co., Struthers; A. V. Agnew, superintendent, Water and Sewer Div., Lorain; and P. C. Laux, superintendent, Div. of Water, Columbus.

George J. VanDorp presided over the Thursday morning session; A. M. Friend took charge of the afternoon program. The following papers were given during the morning: "Possibility and Limitations of Water Well Acidizing," by W. B. Brown, engineer, Dowell, Inc., Cleveland; "Softening Plant Sludge Disposal," by F. H. Waring, chief engineer, Ohio Dept. of Health, Columbus; "Cleaning Water Mains," by Paul C. Laux, superintendent, Div. of Water, Columbus; "Activities of the Governor's Advisory Committee on Ohio's Water Resources," by Robert C. Smith, assistant chief, Div. of Water and principal geologist and secretary of the Governor's Advisory Committee on Ohio's Water Resources; "Public Employees Re-

(*Continued on page 86 P&R*)

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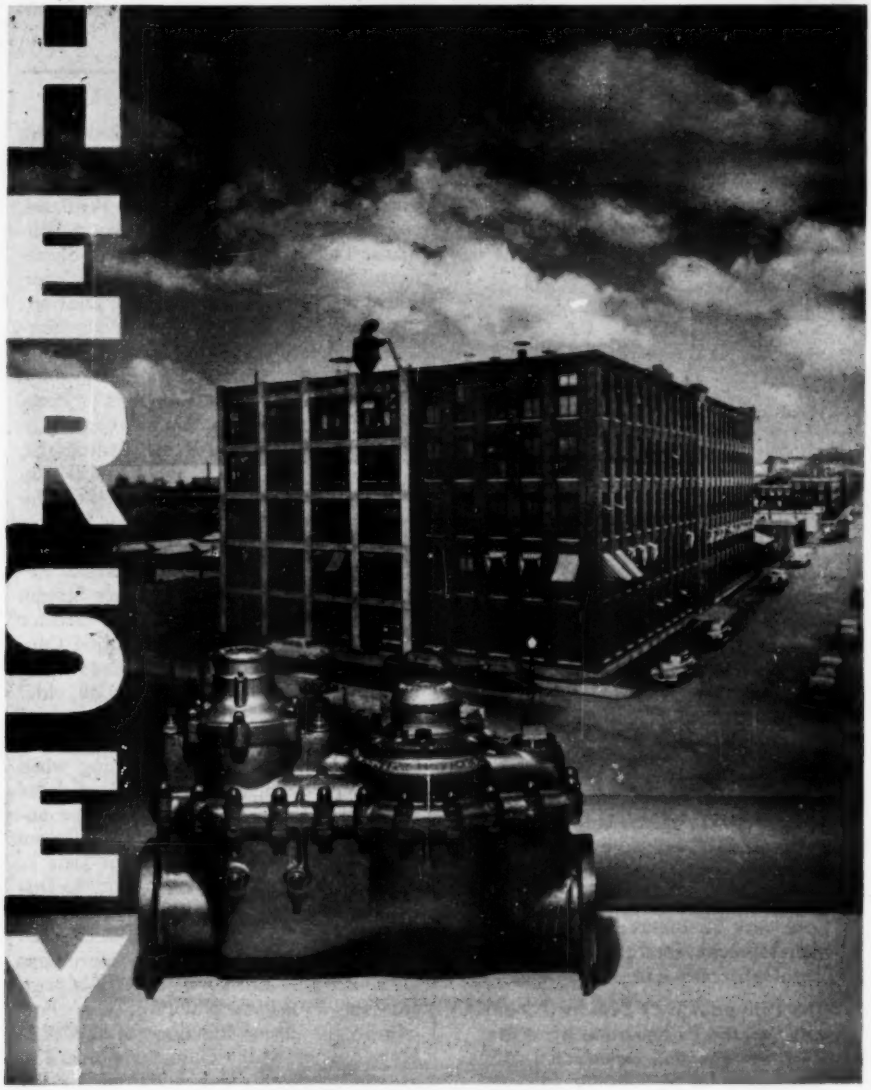

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Section Meetings

(*Continued from page 84 P&R*)

tirement Systems," by J. E. Gotherman, Div. of Research, Ohio Municipal League. Heard on Thursday afternoon were: "Engineering Elements," by L. G. Williams, consulting engineer, Jones, Henry & Williams, Toledo; "Combating Water Shortages," by J. R. Patterson, chief engineer, Floyd G. Brown and Assocs., Marion; "Problems of Municipalities With Surface Supplies," by Homer Knox, principal assistant sanitary engineer, Ohio Department of Health, Columbus; "Problems of Municipalites With Ground Water Supplies," by Paul Kaser, hydrologist, Div. of Water, Dept. of Natural Resources, Columbus; "Possibilities of Developing Reservoirs on the Upper Reaches of Ohio Streams," by C. V. Youngquist, chief, Div. of Water, Dept. of Natural Resources; "Progress in Correcting Stream Pollution," by Arthur Robinson, director of public relations, Water Pollution Control Board, Columbus; and "Recovering the Lost Reserve," by R. D. McGill, chief engineer, H. C. Nutting Co., Cincinnati.

The manufacturers' association group took top billing Thursday evening when they were the hosts for a cocktail hour which was very well attended. The annual banquet held in the large ballroom followed, and AWWA President Dale L. Maffitt presented the Wendell R. LaDue Citations to H. H. Black, Cincinnati; P. D. Cook, Painesville; and Wendell R. LaDue, Akron, for 20 years' continuous membership in AWWA. After this presentation, President Maffitt gave a short talk on the major functions of AWWA. Homer Knox of the Ohio State Board of Health received the nomination for the George W. Fuller Memorial Award. An entertaining and humorous talk on "Women, Taxes, and Hogs" by Jack Major of Paducah, Ky., concluded the entertainment for the evening.

Don D. Heffelfinger presided at the Friday morning session. A panel discussion on "Experiences and Legal Aspects of the Installation, Inspection and Main-

(*Continued on page 88 P&R*)

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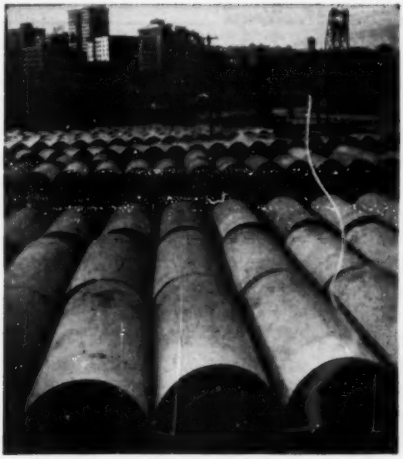
PREFERS

Concrete

Pressure Pipe



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Section Meetings

(Continued from page 86 P&R)

tenance of Fire Hydrants by Municipally Owned Water Works" was presented by J. Paul Price, chief engineer of distribution, Warren; F. J. Schwemler, commissioner of water, Cleveland; R. B. Holt, superintendent, Div. of Water, Springfield; Frank Ruck, superintendent, Water and Sewage, Troy; and A. W. Grathwol, superintendent of distribution, Sandusky. "A Palatable Water" was the topic of a talk by Joseph G. Filicky, research chemist, Industrial Chemical Sales Div., West Virginia Pulp and Paper Co., Tyrone, Pa. "Chloride Contamination of Ground Water by Industrial Wastes" was the subject of a talk by A. A. Ulrich, vice-president, Ohio Water Service Co., and a discussion followed by A. Robinson, public relations director, Water Pollution Control Board.

Following the Friday noon luncheon, the annual business meeting was held and the following officers were elected for 1955: George J. VanDorp, Toledo, chairman; Don D. Heffelfinger, Alliance, vice-chairman; M. E. Druley, Wilmington, secretary-treasurer; S. D. Bresler, Lima, Trustee; and C. E. Beatty, Middletown, AWWA director.

Mrs. J. D. Wittenmeyer, chairman of the Ladies Arrangement Committee, had an interesting and enjoyable program planned for the ladies who attended the conference.

M. E. Druley
Secretary-Treasurer

Wisconsin Section: The Wisconsin Section held its 33rd annual meeting at the Hotel Northland, Green Bay, on Sept. 28–30, with a record attendance of 316.

(Continued on page 90 P&R)

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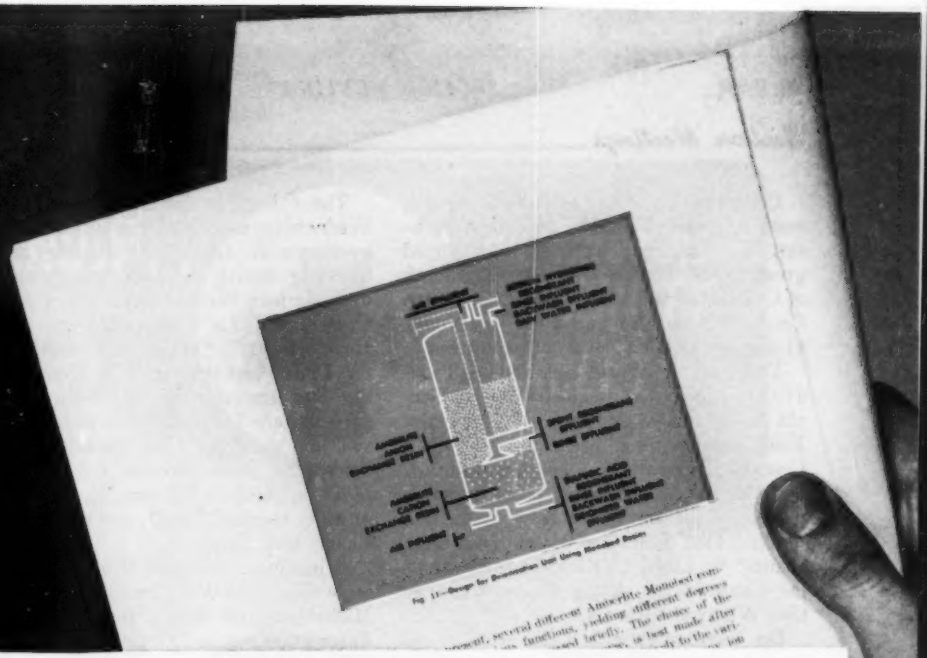

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Section Meetings

(Continued from page 88 P&R)

Preliminaries at the afternoon opening session, presided over by Chairman Richard E. Cannard, included the official greeting by Mayor Dominic Olejniczak of Green Bay and a response by Chairman Cannard, who also appointed the Nominating and Fuller Award Committees.

The Surface Water Session on Tuesday afternoon was presided over by Gerald A. Rohlich of the Univ. of Wisconsin. Two papers were presented: "Upflow Contact Sludge Blanket Treatment Units" by William U. Gallaher, plant superintendent, Appleton Water Dept., and "Use of Activated Silica in Water Treatment Plants" by Lloyd L. Klinger, engineer of the Consolidated Water Power & Paper Co., Wisconsin Rapids.

On Tuesday evening there was an informal party at the Hotel Northland to which both men and ladies were invited.

The Ground Water Session, held Wednesday morning, was presided over by Zenno A. Gorder. Following an interesting movie, a paper was presented by Chairman Gorder, city engineer at La Crosse, on "La Crosse Ground Water Development." "Water in Volume From the Drift" was presented by Joseph Lustig, city engineer of Janesville. These papers were followed by a panel discussion on wells by Leon Smith, superintendent of water works and sewerage, Madison; Hubert J. Evers, superintendent of water works, Merrill; and the speakers, Lustig and Gorder.

A luncheon was held Wednesday noon at which AWWA President Dale L. Maffitt outlined briefly the work of the Association.

The Distribution and Pumping Session was held Wednesday afternoon, with

(Continued on page 92 P&R)

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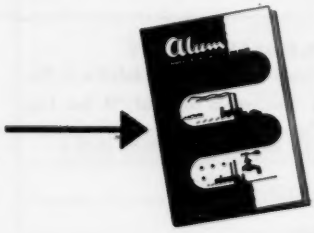

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Section Meetings

(Continued from page 90 P&R)

Arno T. Lenz of the Univ. of Wisconsin Hydraulics Lab. presiding. A cross-connection symposium was led off by C. A. Stravinski, Wisconsin State Board of Health. J. G. Morris, Milwaukee Health Dept., continued with an analysis of the most common types of cross connections. J. C. Zufelt, superintendent, Board of Water Commissioners at Sheboygan, concluded with a report on how elimination of cross connections in his city has progressed.

The paper on "Supplying Peak Demands" by E. F. Tanghe, superintendent of Water Works, Milwaukee, provided much interesting data regarding ratios of peak demands to average daily water consumption for older sections of the city with commercial and industrial demands, newer sections of the city, suburbs with small homes, and wealthier residential suburbs. A. E. Hintz, Oshkosh; E. F. Spitzer, South Milwaukee; and William Hammann of Milwaukee led a long and varied panel discussion on the two subjects. It was pointed out that these two problems are closely related because peak consumption often produces low pressures in parts of the system, with the result that cross-connection contamination can be a serious problem.

The banquet was held Wednesday evening in the Crystal Ballroom of the Hotel Northland. For entertainment there was a floor show and a very fine orchestra from Milwaukee.

The General Session was held Thursday morning, with Chairman Arthur J. Jark presiding. The first speaker was Arthur Kuranz, manager of the water works at Waukesha, whose subject was "What Is a Water Works?" The second paper was presented by A. O. Putnam, Director of Public Relations, Layne & Bowler Co., Memphis, Tenn., on "Public Relations—An Opportunity for Your Water Department."

In the panel discussion which followed, there was considerable discussion of the method of computing a rate base used by the Public Service Commission of Wisconsin. Many of those present felt that the high depreciation accruals accumulated in past years were now having an adverse effect on the rate base.

As usual, a very fine ladies' program was provided. It included a tour of the Northern Paper Mills, luncheon and cards at the Beaumont Hotel, and attendance at the informal Tuesday evening party and the banquet on Wednesday evening.

LEON A. SMITH
Secretary-Treasurer

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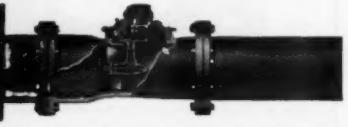

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(See Prof. Services, pp. 25-29)

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Johns-Manville Corp.
Infilco Inc.
Northern Gravel Co.
Permutit Co.
Carl Schleicher & Schuell Co.

Filters, incl. Feedwater:
Cochrane Corp.
Dorr Co.
Infilco Inc.
Morse Bros. Mchy. Co.
Permutit Co.
Roberts Filter Mfg. Co.
Ross Valve Mfg. Co.

Filters, Membrane (MF)
AG Chemical Co.
Millipore Filters Corp.
Carl Schleicher & Schuell Co.

Filtration Plant Equipment:
Chain Belt Co.
Cochrane Corp.
Filtration Equipment Corp.
General Filter Co.
Graver Water Conditioning Co.
Hungerford & Terry, Inc.
Infilco Inc.
F. B. Leopold Co.
Omega Machine Co. (Div., B-I-F Industries)
Permutit Co.
Roberts Filter Mfg. Co.
Stuart Corp.
Welsbach Corp., Ozone Processes Div.

Fittings, Copper Pipe:
Dresser Mfg. Div.
M. Greenberg's Sons
Hays Mfg. Co.
James Jones Co.
Mueller Co.

Fittings, Tees, Ells, etc.:
American Cast Iron Pipe Co.
American Locomotive Co.
Carlon Products Corp.
Cast Iron Pipe Research Assn.
James B. Clow & Sons
Crane Co.
Dresser Mfg. Div.
James Jones Co.
Kennedy Valve Mfg. Co.
M & H Valve & Fittings Co.
McWane Cast Iron Pipe Co.
Pacific States Cast Iron Pipe Co.
Trinity Valley Iron & Steel Co.
United States Pipe & Foundry Co.
R. D. Wood Co.

Flocculating Equipment:
Chain Belt Co.
Cochrane Corp.
Dorr Co.
General Filter Co.
Infilco Inc.
Permutit Co.
Stuart Corp.

Fluoride Chemicals:
American Agricultural Chemical Co.
Blockson Chemical Co.
Henry Sundheimer Co.

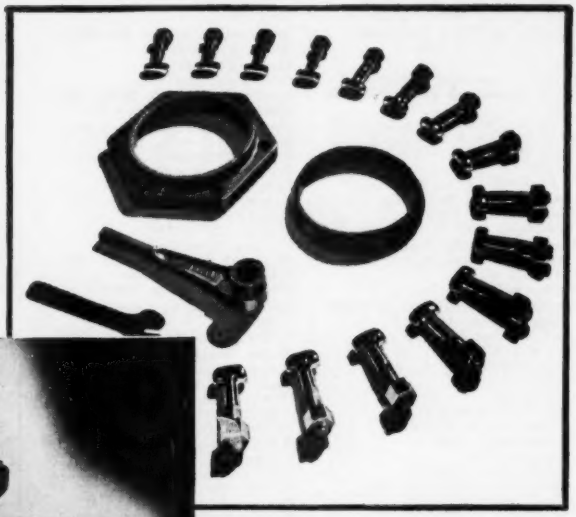
Fluoride Feeders:
Builders-Providence, Inc.
Omega Machine Co. (Div., B-I-F Industries)
Wallace & Tiernan Co., Inc.

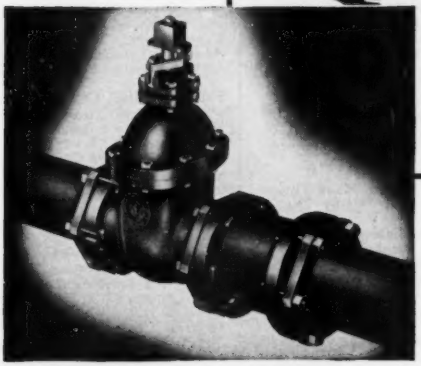
Furnaces:
Jos. G. Pollard Co., Inc.

Gages, Liquid Level:
Builders-Providence, Inc.
Infilco Inc.
Simplex Valve & Meter Co.

Gages, Loss of Head, Rate of Flow, Sand Expansion:
Builders-Providence, Inc.
Infilco Inc.
Northrop & Co., Inc.
Simplex Valve & Meter Co.

ALL YOU NEED





IS: A RATCHET AND OPEN END WRENCH, THREE RUBBER GASKETS, THREE CAST IRON FOLLOWER RINGS AND A HAND FULL OF BOLTS AND NUTS ***TO INSTALL***

the New
SMITH CUT IN VALVE & SLEEVE

Gone are the days of—large costly excavations—melting furnaces and pouring pots—pouring and caulking lead joints—when the New All Mechanical Joint Smith Cut In Valve and Sleeve is used.

The Cut In Valve can be installed rapidly, in fair or stormy weather on Cast Iron A.W.W.A. and Federal specification water mains, by unskilled labor, using only two wrenches.

Moulded rubber gaskets fit into machined "Stuffing Box" type joints, guaranteeing a permanent leak-proof seal.

Smith Cut In Valves are manufactured in compliance with the A.W.W.A. Gate Valve specification, and all parts are interchangeable with like parts of Smith A.W.W.A. Gate Valves.

Write for Bulletin No. MJ2.

39

THE A.P. SMITH MFG. CO.
EAST ORANGE, NEW JERSEY

Gasholders:
Chicago Bridge & Iron Co.
Pittsburgh-Des Moines Steel Co.

Gaskets, Rubber Packing:
James B. Clow & Sons
Johns-Manville Corp.

Gates, Shear and Sluice:
Armco Drainage & Metal Products, Inc.
Chapman Valve Mfg. Co.
James B. Clow & Sons
Morse Bros. Mchy. Co.
Mueller Co.
R. D. Wood Co.

Gears, Speed Reducing:
DeLaval Steam Turbine Co.
Philadelphia Gear Works, Inc.

Glass Standards—Colorimetric Analysis Equipment:
Klett Mfg. Co.
Wallace & Tiernan Inc.

Goosenecks (with or without Corporation Stops):
James B. Clow & Sons
Hays Mfg. Co.
James Jones Co.
Mueller Co.

Hydrants:
James B. Clow & Sons
Darling Valve & Mfg. Co.
M. Greenberg's Sons
James Jones Co.
Kennedy Valve Mfg. Co.
Ludlow Valve Mfg. Co., Inc.
M & H Valve & Fittings Co.
Mueller Co.
Pacific States Cast Iron Pipe Co.
A. P. Smith Mfg. Co.
Rensselaer Valve Co.
R. D. Wood Co.

Hydrogen Ion Equipment:
Wallace & Tiernan Inc.

Ion Exchange Materials:
Cochrane Corp.
General Filter Co.
Hungerford & Terry, Inc.
Infilco Inc.
Permutit Co.
Roberts Filter Mfg. Co.
Rohm & Haas Co.

Iron, Pig
Woodward Iron Co.

Iron Removal Plants:
American Well Works
Belco Industrial Equipment Div.
Chain Belt Co.
Cochrane Corp.
General Filter Co.
Graver Water Conditioning Co.
Hungerford & Terry, Inc.
Infilco Inc.
Permutit Co.
Roberts Filter Mfg. Co.
Walker Process Equipment, Inc.
Welsbach Corp., Ozone Processes Div.

Jointing Materials:
Atlas Mineral Products Co.
Hydraulic Development Corp.
Johns-Manville Corp.
Leadite Co., Inc.

Joints, Mechanical, Pipe:
American Cast Iron Pipe Co.
Cast Iron Pipe Research Assn.
James B. Clow & Sons
Dresser Mfg. Div.
McWane Cast Iron Pipe Co.
Pacific States Cast Iron Pipe Co.
Trinity Valley Iron & Steel Co.
United States Pipe & Foundry Co.
R. D. Wood Co.

Leak Detectors:
Jos. G. Pollard Co., Inc.

Lime Slakers and Feeders:
Dorr Co.
General Filter Co.
Infilco Inc.
Omega Machine Co. (Div., B-I-F Industries)
Permutit Co.

Magnetic Dipping Needles:
W. S. Darley & Co.

Meter Boxes:
Ford Meter Box Co.
Pittsburgh Equitable Meter Div.
Universal Concrete Pipe Co.

Meter Couplings and Yokes:
Badger Meter Mfg. Co.
Dresser Mfg. Div.
Ford Meter Box Co.
Hays Mfg. Co.
Hersey Mfg. Co.
James Jones Co.
Mueller Co.
Neptune Meter Co.
Pittsburgh Equitable Meter Div.
Welsbach Corp., Kitson Valve Div.
Worthington-Gamon Meter Co.

Meter Reading and Record Books:
Badger Meter Mfg. Co.

Meter Testers:
Badger Meter Mfg. Co.
Ford Meter Box Co.
Hersey Mfg. Co.
Neptune Meter Co.
Pittsburgh Equitable Meter Div.

Meters, Domestic:
Badger Meter Mfg. Co.
Buffalo Meter Co.
Hersey Mfg. Co.
Neptune Meter Co.
Pittsburgh Equitable Meter Div.
Well Machinery & Supply Co.
Worthington-Gamon Meter Co.

Meters, Filtration Plant, Pumping Station, Transmission Line:
Builders-Providence, Inc.
Foster Eng. Co.
Infilco Inc.
Simplex Valve & Meter Co.

Meters, Industrial, Commercial:
Badger Meter Mfg. Co.
Buffalo Meter Co.
Builders-Providence, Inc.
Hersey Mfg. Co.
Neptune Meter Co.
Pittsburgh Equitable Meter Div.
Simplex Valve & Meter Co.
Well Machinery & Supply Co.
Worthington-Gamon Meter Co.

Mixing Equipment:
Chain Belt Co.
General Filter Co.
Infilco Inc.

Ozonation Equipment:
Welsbach Corp., Ozone Processes Div.

Pipe, Asbestos-Cement:
Johns-Manville Corp.
Keasbey & Mattison Co.

Pipe, Brass:
American Brass Co.

Pipe, Cast Iron (and Fittings):
American Cast Iron Pipe Co.
Cast Iron Pipe Research Assn.
James B. Clow & Sons
Crane Co.
McWane Cast Iron Pipe Co.
Pacific States Cast Iron Pipe Co.
Trinity Valley Iron & Steel Co.
United States Pipe & Foundry Co.
R. D. Wood Co.

Pipe, Cement Lined:
Cast Iron Pipe Research Assn.
James B. Clow & Sons
McWane Cast Iron Pipe Co.
Pacific States Cast Iron Pipe Co.
United States Pipe & Foundry Co.
Universal Concrete Pipe Co.
R. D. Wood Co.

Pipe Coatings and Linings:
The Barrett Div.
Cast Iron Pipe Research Assn.
Centriline Corp.
Koppers Co., Inc.
Reilly Tar & Chemical Corp.

Pipe, Concrete:
American Concrete Pressure Pipe Assn.
American Pipe & Construction Co.
Lock Joint Pipe Co.
Universal Concrete Pipe Co.

Pipe, Copper:
American Brass Co.

Pipe Cutters
James B. Clow & Sons
Ellis & Ford Mfg. Co.
Jos. G. Pollard Co., Inc.
Reed Mfg. Co.
A. P. Smith Mfg. Co.

Pipe Jointing Materials; see Jointing Materials

Pipe Locators:
W. S. Darley & Co.
Jos. G. Pollard Co., Inc.

Pipe, Steel:
American Locomotive Co.
Armco Drainage & Metal Products, Inc.
Bethlehem Steel Co.

Plugs, Removable:
James B. Clow & Sons
Jos. G. Pollard Co., Inc.
A. P. Smith Mfg. Co.

Pressure Regulators:
Allis-Chalmers Mfg. Co.
Foster Eng. Co.
Mueller Co.
Ross Valve Mfg. Co.

Pumps, Boiler Feed:
DeLaval Steam Turbine Co.

Pumps, Centrifugal:
Allis-Chalmers Mfg. Co.
American Well Works
DeLaval Steam Turbine Co.
Morse Bros. Mchy. Co.
C. H. Wheeler Mfg. Co.

Pumps, Chemical Feed:
Infilco Inc.
Proportioneers, Inc.
Wallace & Tiernan Inc.

Pumps, Deep Well:
American Well Works
Layne & Bowler, Inc.

Pumps, Diaphragm:
Dorr Co.
Morse Bros. Mchy. Co.

Pumps, Hydrant:
W. S. Darley & Co.
Jos. G. Pollard Co., Inc.

Pumps, Hydraulic Booster:
Ross Valve Mfg. Co.

Pumps, Sewage:
Allis-Chalmers Mfg. Co.
DeLaval Steam Turbine Co.
C. H. Wheeler Mfg. Co.

Pumps, Sump:
DeLaval Steam Turbine Co.
C. H. Wheeler Mfg. Co.

Pumps, Turbine:
DeLaval Steam Turbine Co.
Layne & Bowler, Inc.

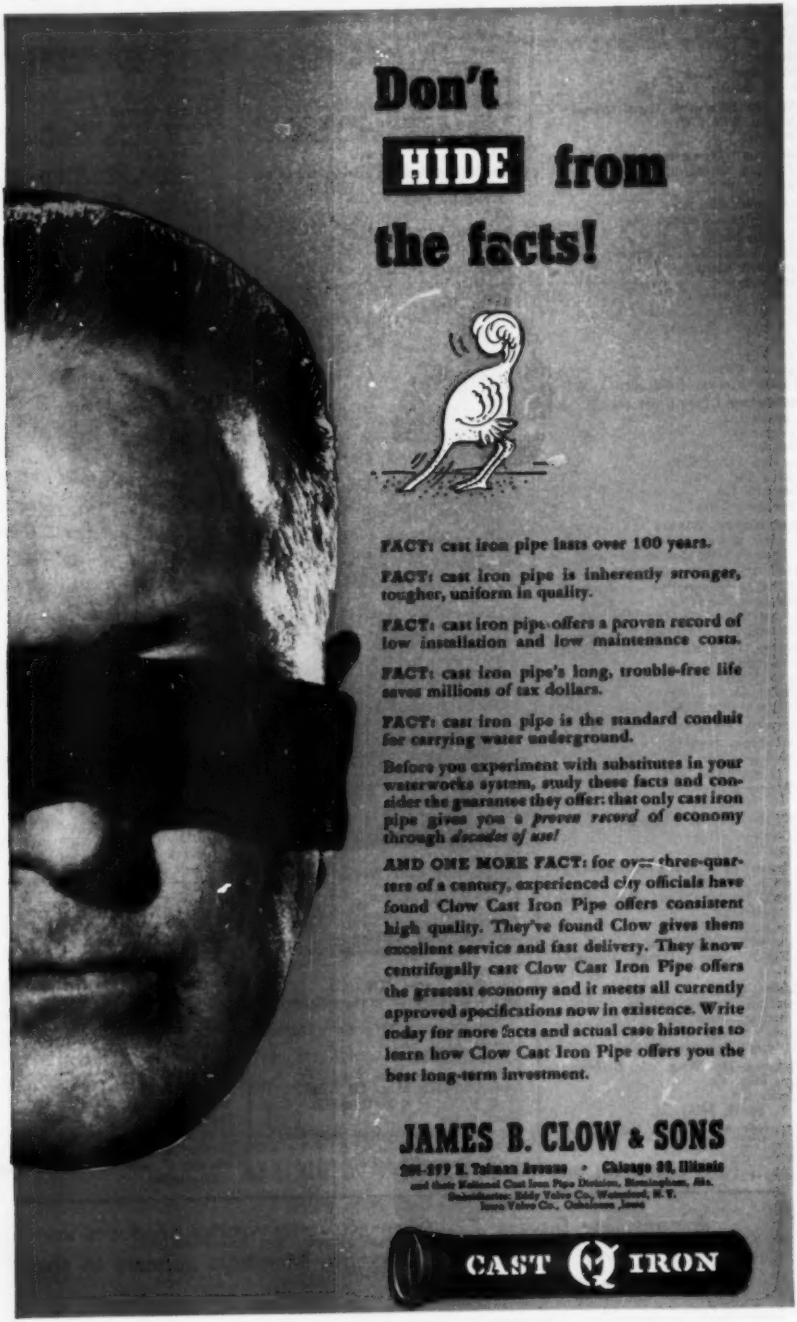
Recorders, Gas Density, CO_2, NH_3, SO_2, etc.:
Permutit Co.
Wallace & Tiernan Inc.

Recording Instruments:
Infilco Inc.
Wallace & Tiernan Inc.

Reservoirs, Steel:
Chicago Bridge & Iron Co.
Pittsburgh-Des Moines Steel Co.

Sand Expansion Gages; see Gages

Sleeves; see Clamps


Don't
HIDE from
the facts!
FACT: cast iron pipe lasts over 100 years.
FACT: cast iron pipe is inherently stronger, tougher, uniform in quality.
FACT: cast iron pipe offers a proven record of low installation and low maintenance costs.
FACT: cast iron pipe's long, trouble-free life saves millions of tax dollars.
FACT: cast iron pipe is the standard conduit for carrying water underground.
Before you experiment with substitutes in your waterworks system, study these facts and consider the guarantee they offer: that only cast iron pipe gives you a proven record of economy through decades of use!
AND ONE MORE FACT: for over three-quarters of a century, experienced city officials have found Clow Cast Iron Pipe offers consistent high quality. They've found Clow gives them excellent service and fast delivery. They know centrifugally cast Clow Cast Iron Pipe offers the greatest economy and it meets all currently approved specifications now in existence. Write today for more facts and actual case histories to learn how Clow Cast Iron Pipe offers you the best long-term investment.
JAMES B. CLOW & SONS
501-517 N. Talman Avenue • Chicago 80, Illinois
and their National Cast Iron Pipe Division, Birmingham, Ala.
Subsidiaries: Eddy Valve Co., Watervliet, N.Y.
Iowa Valve Co., Oskaloosa, Iowa
CAST IRON

Sleeves and Valves, Tapping:
James B. Clow & Sons
M & H Valve & Fittings Co.
Mueller Co.
Rensselaer Valve Co.
A. P. Smith Mfg. Co.

Sludge Blanket Equipment:
General Filter Co.
Permutit Co.

Sodium Hexametaphosphate:
Blockson Chemical Co.
Calgon, Inc.

Sodium Silicate
Philadelphia Quartz Co.

Softeners:
Belco Industrial Equipment Div.
Cochrane Corp.
Dorr Co.
General Filter Co.
Graver Water Conditioning Co.
Hungerford & Terry, Inc.
Infilco Inc.
Permutit Co.
Roberts Filter Mfg. Co.
Walker Process Equipment, Inc.

Softening Chemicals and Compounds:
Calgon, Inc.
Cochrane Corp.
General Filter Co.
Infilco Inc.
Permutit Co.
Tennessee Corp.

Standpipes, Steel:
Chicago Bridge & Iron Co.
Pittsburgh-Des Moines Steel Co.

Steel Plate Construction:
American Locomotive Co.
Bethlehem Steel Co.
Chicago Bridge & Iron Co.
Pittsburgh-Des Moines Steel Co.

Stops, Curb and Corporation:
Hays Mfg. Co.
James Jones Co.
Mueller Co.
Welsbach Corp., Kitson Valve Div.

Storage Tanks; see Tanks

Strainers, Suction:
James B. Clow & Sons
M. Greenberg's Sons
Johnson, Edward E., Inc.
R. D. Wood Co.

Surface Wash Equipment:
Cochrane Corp.
Permutit Co.

Swimming Pool Sterilization:
Everson Mfg. Corp.
Omega Machine Co. (Div., B-I-F Industries)
Proportioneers, Inc.
Wallace & Tiernan Inc.
Welsbach Corp., Ozone Processes Div.

Tanks, Steel:
American Locomotive Co.
Bethlehem Steel Co.
Chicago Bridge & Iron Co.
Pittsburgh-Des Moines Steel Co.

Tapping-Drilling Machines:
Hays Mfg. Co.
Mueller Co.
A. P. Smith Mfg. Co.

Tapping Machines, Corp.:
Hays Mfg. Co.
Mueller Co.
Welsbach Corp., Kitson Valve Div.

Taste and Odor Removal:
Cochrane Corp.
General Filter Co.
Industrial Chemical Sales Div.
Infilco Inc.
Permutit Co.
Proportioneers, Inc.
Wallace & Tiernan Inc.
Welsbach Corp., Ozone Processes Div.

Turbidimetric Apparatus (For Turbidity and Sulfate Determinations):
Wallace & Tiernan Inc.

Turbines, Steam:
DeLaval Steam Turbine Co.

Turbines, Water:
DeLaval Steam Turbine Co.

Valve Boxes:
James B. Clow & Sons
Ford Meter Box Co.
M & H Valve & Fittings Co.
Mueller Co.
Pacific States Cast Iron Pipe Co.
Rensselaer Valve Co.
A. P. Smith Mfg. Co.
Trinity Valley Iron & Steel Co.
R. D. Wood Co.

Valve-Inserting Machines:
Mueller Co.
A. P. Smith Mfg. Co.

Valves, Altitude:
Ross Valve Mfg. Co., Inc.

Valves, Butterfly, Check, Flap, Foot, Hose, Mud and Plug:
Chapman Valve Mfg. Co.
James B. Clow & Sons
Crane Co.
DeZurik Shower Co.
M. Greenberg's Sons
M & H Valve & Fittings Co.
Mueller Co.
Rensselaer Valve Co.
R. D. Wood Co.

Valves, Detector Check:
Hersey Mfg. Co.

Valves, Electrically Operated:
Belco Industrial Equipment Div.
Chapman Valve Mfg. Co.
James B. Clow & Sons
Crane Co.
Darling Valve & Mfg. Co.
Kennedy Valve Mfg. Co.
M & H Valve & Fittings Co.
Mueller Co.
Philadelphia Gear Works, Inc.
Rensselaer Valve Co.
A. P. Smith Mfg. Co.

Valves, Float:
James B. Clow & Sons
Ross Valve Mfg. Co., Inc.

Valves, Gate:
Chapman Valve Mfg. Co.
James B. Clow & Sons
Crane Co.
Darling Valve & Mfg. Co.
Dresser Mfg. Div.
James Jones Co.
Kennedy Valve Mfg. Co.
Ludlow Valve Mfg. Co., Inc.
M & H Valve & Fittings Co.
Mueller Co.
Pacific States Cast Iron Pipe Co.
Rensselaer Valve Co.
A. P. Smith Mfg. Co.
R. D. Wood Co.

Valves, Hydraulically Operated:
Chapman Valve Mfg. Co.
James B. Clow & Sons
Crane Co.
Darling Valve & Mfg. Co.
DeZurik Shower Co.
Kennedy Valve Mfg. Co.
M & H Valve & Fittings Co.
Mueller Co.
Philadelphia Gear Works, Inc.
Rensselaer Valve Co.
A. P. Smith Mfg. Co.
R. D. Wood Co.

Valves, Large Diameter:
Chapman Valve Mfg. Co.
James B. Clow & Sons
Crane Co.
Darling Valve & Mfg. Co.
Kennedy Valve Mfg. Co.
Ludlow Valve Mfg. Co., Inc.
M & H Valve & Fittings Co.
Mueller Co.
Rensselaer Valve Co.
A. P. Smith Mfg. Co.
R. D. Wood Co.

Valves, Regulating:
Crane Co.
DeZurik Shower Co.
Foster Eng. Co.
Mueller Co.
Ross Valve Mfg. Co.

Valves, Swing Check:
Chapman Valve Mfg. Co.
James B. Clow & Sons
Crane Co.
Darling Valve & Mfg. Co.
M. Greenberg's Sons
M & H Valve & Fittings Co.
Mueller Co.
Rensselaer Valve Co.
A. P. Smith Mfg. Co.
R. D. Wood Co.

Waterproofing
Gulf States Asphalt Co.
Inertol Co., Inc.

Water Softening Plants; see Softeners

Water Supply Contractors:
Layne & Bowler, Inc.

Water Testing Apparatus:
Wallace & Tiernan Inc.

Water Treatment Plants:
Allis-Chalmers Mfg. Co.
American Well Works
Belco Industrial Equipment Div.
Chain Belt Co.
Chicago Bridge & Iron Co.
Cochrane Corp.
Dorr Co.
General Filter Co.
Graver Water Conditioning Co.
Hungerford & Terry, Inc.
Infilco Inc.
Permutit Co.
Pittsburgh-Des Moines Steel Co.
Roberts Filter Mfg. Co.
Walker Process Equipment, Inc.
Wallace & Tiernan Inc.
Welsbach Corp., Ozone Processes Div.

Well Drilling Contractors:
Layne & Bowler, Inc.

Well Screens
Johnson, Edward E., Inc.

Wrenches, Ratchet:
Dresser Mfg. Div.

Zeolite; see Ion Exchange Materials

A complete Buyers' Guide to all water works products and services offered by AWWA Associate Members appears in the 1953 AWWA Directory.

WORTHINGTON-GAMON

WATCH DOG

The meter used by thousands of municipalities in the U. S.

WATER METERS

"Watch Dog" models . . . made in standard capacities from 20 g.p.m. up: frost-proof and split case in household sizes. Disc, turbine, or compound type.

SURE TO MEET YOUR SPECIFICATIONS FOR ACCURACY, LOW MAINTENANCE, LONG LIFE.

Before you invest in water meters, get acquainted with the design and performance advantages which make Worthington-Gamon Watch Dog Water Meters first choice of so many municipalities and private water companies in the United States.

WORTHINGTON-GAMON METER DIVISION

Worthington Corporation

296 SOUTH STREET, NEWARK 5, NEW JERSEY

OFFICES IN ALL PRINCIPAL CITIES

With 100 years

Ewing Galloway

This is New York, as seen from East River, showing Empire State, Chrysler and United Nations buildings.

Bettmann Archive

Old print showing cast iron water mains being installed in New York about 100 years ago.

MODERNIZED cast iron

of EXPERIENCE...
they must be right!

NEW YORK installed cast iron water mains 100 years ago... and installs them today!

One hundred years ago, New York was a city of about 750,000 population, served by 237 miles of water mains. Today's eight million population requires 5500 miles of mains, of which 98% are cast iron. Some of these mains are still functioning after a century and more of service. From 90 M.G.D. a century ago, capacity has grown to 1500 M.G.D.

In good condition after 100 years of service, this cast iron distribution main is one of several still functioning in New York City.

A customer who buys your product year after year—generation after generation—is a "jewel beyond price". Be you merchant or manufacturer, you might count such customers on the fingers of your two hands. Yet, the cast iron pressure pipe industry can count more than 60 of them—utilities that have been buying cast iron pipe for water or gas mains (or both) for 100 years.

Cast iron pipe has been a rugged, long-lived product from the earliest days. Today's *modernized* cast iron pipe, centrifugally cast, is even stronger, tougher, and more uniform in quality. And, where needed and specified, it is centrifugally lined with cement mortar to assure sustained carrying capacity throughout the long life of the pipe.

Cast Iron Pipe Research Association, Thos. F. Wolfe, Managing Director, 122 So. Michigan Ave., Chicago 3.

CAST IRON

The Q-Check stenciled on pipe is the Registered Service Mark of the Cast Iron Pipe Research Association.

pipe FOR MODERN WATER WORKS OPERATION

Meter Sets Durability Record

Over 4½ million gallons measured by ⅝ inch Rockwell Arctic type over three year span.

Joseph Morano, Water Commissioner, John A. Hastings, Superintendent and Gus Pledski, Meter Foreman with repaired meter that established outstanding service record.

Town of Clinton, Massachusetts
WATER DEPARTMENT
Office Board of Water Commissioners
359 HIGH STREET

Clinton, Mass.

April 6, 195[illegible]

Mr. Thomas P. Gallagher
Rockwell Manufacturing Company
708 Beacon Street
Boston 15, Massachusetts

Dear Tom:

You're always crowing about your Rockwell meters, so here's a story that will warm the cockles of your Irish heart. Back in October of 1950, we installed one of your 5/8 in. Arctic Meters in a plastics manufacturing plant. It was a normal installation and we, of course, expected the usual good service that we get from all your meters. Here's what we really got: From October, 1950, to October 20, 1953, your Arctic Meter registered over 600,000 cu ft---over 4½ mg of water! Not once in the thirty-six months of continuous service did the meter require maintenance of any kind. When the meter did finally require servicing, we had only to replace the bushings and gears in the rear train and shim the disc and the meter was as good as new, all at a cost of only $2.40 for necessary parts.

There's the story, Tom,---4½ mg measured for a parts cost of $2.40. What do you do with your old meters. . . shoot them?

Very truly yours,

John A. Hastings

John A. Hastings
Superintendent

Made Good As New With Only $2.40 Worth of Repair Parts

This meter ran continuously for over three years at breakneck speed. You couldn't put a meter to a more grueling test. Certainly, we don't recommend overspeeding meters. But this experience does demonstrate that Rockwell builds an extra measure of durability into water meters. That, plus long sustained accuracy and low maintenance costs are the *quality* factors you can be sure to get in every Rockwell meter you buy.

The Symbol for Service, Quality and Performance in Water Meters

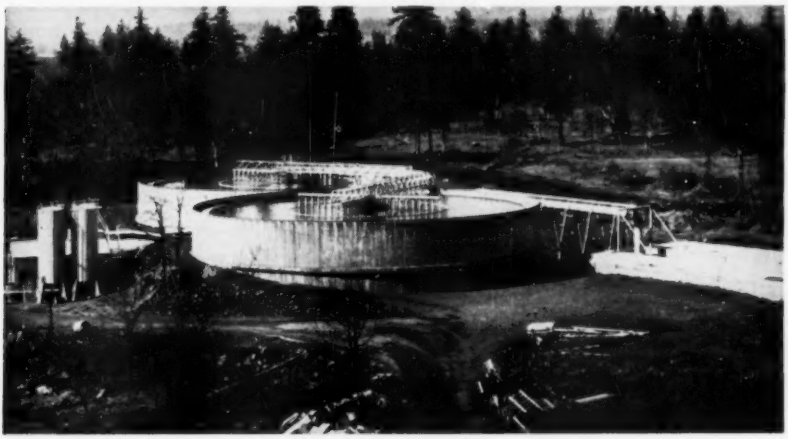
ROCKWELL MANUFACTURING COMPANY

Pittsburgh 8, Pa. Atlanta Boston Charlotte Chicago Dallas Houston Los Angeles Midland, Texas N. Kansas City, Mo. New York Philadelphia Pittsburgh San Francisco Seattle Shreveport Tulsa *Canadian Water Meter Sales: Peacock Brothers Limited*

In water treatment problems...

you won't find identical twins

No two water treatment problems are exactly alike. The right solution to each can only be arrived at after a careful study of the local conditions. Variables such as raw water composition, rate of flow and results required automatically rule out the cure-all approach. The installation shown below is a good example of how equipment should be selected to fit the job . . . and not vice versa.



At St. Helens Pulp & Paper Company

Fluctuating feed characteristics and changing process needs require conventional treatment in combination units

Clear, process water for production of bleach pulp has been a serious problem at the St. Helens Pulp & Paper Company mill at St. Helens, Oregon. Raw water characteristics fluctuate widely because of the tidal action of the Pacific, and the presence of some wastes in the Willamette and Columbia Rivers which join just below the plant. Feed volume fluctuates too — because of changing process needs.

In 1952, water analysis showed 14 to 68 ppm total hardness, 20 to 200 ppm turbidity and 20 to 50 ppm color. The two 120′ dia. Dorrco Clariflocculators shown above were specified to produce 20 MGD of finished water containing no more than 5 ppm color and 5 ppm hardness. Combination units, operating at conventional rates of flow — ideally suited for the changing conditions at St. Helens.

For more information on the complete line of Dorr water treatment units, write for Bulletin No. 9141 to The Dorr Company, Stamford, Conn; *in Canada*, 26 St. Clair Avenue East, Toronto 5.

Every day, nearly 8 billion gallons of water are treated in Dorr equipment.

Better tools TODAY to meet tomorrow's demand.

DORR

WORLD-WIDE RESEARCH • ENGINEERING • EQUIPMENT

FIFTY YEARS 1904–1954

THE DORR COMPANY • ENGINEERS • STAMFORD, CONN.

Offices, Associated Companies or Representatives in principal cities of the world.

LEADITE

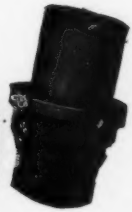
Jointed for . . . Permanence with LEADITE

Generally speaking, most Water Mains are buried beneath the Earth's surface, to be forgotten,—they are to a large extent, laid for permanency. Not only must the pipe itself be dependable and long lived,—but the joints also must be tight, flexible, and long lived,—else leaky joints are apt to cause the great expense of digging up well-paved streets, beautiful parks and estates, etc.

Thus the "jointing material" used for bell and spigot Water Mains MUST BE GOOD,—MUST BE DEPENDABLE,—and that is just why so many Engineers, Water Works Men and Contractors aim to PLAY ABSOLUTELY SAFE, by specifying and using LEADITE.

Time has proven that LEADITE not only makes a tight durable joint,—but that it improves with age.

The pioneer self-caulking material for c. i. pipe.
Tested and used for over 40 years.
Saves at least 75%

THE LEADITE COMPANY
Girard Trust Co. Bldg. Philadelphia, Pa.

No Caulking